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The Self-Concept and Self-Esteem of the Adolescent Physically Disabled by Cerebral Palsy

by

© Joyce Elaine Magill

A THESIS

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Abstract

This paper examined the self-concept, self-esteem, and family relations of 22 (11 girls, 11 boys) adolescents physically disabled by cerebral palsy (C.P.). The C.P. students were matched by sex, school, age (mean age=15.7 years), and IQ (mean=101) with non-disabled adolescents. On the basis of sex and disability individuals were assigned to one of four groups: female disabled, female non-disabled, male disabled, and male non-disabled.

All subjects completed four pen and paper questionnaires: TSCS, CSI, FACES II, and a demographic questionnaire designed for this study. Analysis of the data using a 2X2 MANOVA with 8 dependent variables and a significance level of 0.05 revealed a significant main effect for sex, no significant main effect for disability, and a significant interaction effect for sex with disability. Further analyses revealed that C.P. girls were significantly lower than: 1) the three other groups on physical self-esteem, 2) non-disabled girls and disabled boys on social self-esteem, and 3) the two non-disabled groups on personal self-esteem. The scores of the C.P. boys were similar to those for the non-disabled groups.

When the cohesion scores of the FACES II were analyzed using a one way ANOVA, the results showed that all subjects from enmeshed and balanced families had significantly higher self-esteem scores than those from disengaged families.

The results of this study have implications for those working with C.P. girls. Attention must be focused on determining effective methods of increasing the self-esteem of these girls.

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I. Introduction

Each person is a physically unique individual. Even at birth one infant can be distinguished from another. Yet the pattern of growth and development which an infant follows is similar to that for infants the world over (Dappe, Sherman, & Engel, 1980). Primitive reflex activity which first predominates is followed by higher level reactions. Voluntary movements start to override reflexes and so on (Dappe et al., 1981). As the child develops physically, he/she also develops a frame of reference from which to view the world and himself/herself. This frame of reference is termed one's self-concept.

But what of the physically disabled for whom development is delayed or follows abnormal patterns? They are markedly different and subject to special frustrations and physical limitations beginning early in life. Does physical abnormality affect the disabled person's frame of reference? Is their self-concept different from those who have developed normally? Before one can address these questions it is necessary to clarify terms such as self-concept and examine the process through which one arrives at a particular view of oneself.

For this study of the self-concept and self-esteem of adolescents physically disabled by cerebral palsy, self-concept will be differentiated from self-esteem. Thus self-concept is defined as the reflexive perception (from Wells & Marwell, 1976) of all that one is in terms of

experiences, capacities, personal attributes (from Coopersmith, 1967), roles, and values (from Beane & Lipka, 1980).

A reflexive perception is one in which the person performing the perception is also the object of the perception. In other words, rather than observing someone else, one observes oneself so that the perceiver and the perceived are the same person. Attributes are intrinsic qualities or intrinsic characteristics and capacities are powers and abilities. Self-concept is descriptive rather than evaluative in nature and is measured as a trait within any one individual in terms of whether it is clear or confused, stable or unstable, complete or incomplete.

Self-esteem is the evaluative assessment one makes regarding one's worth, significance, capabilities, and performance and is described in such terms as negative or positive, high or low (Beane & Lipka, 1980; Coopersmith, 1967). Put more succinctly, self-concept is what I perceive that I am and do and self-esteem is how I feel about or value that self-perception. While in theory it is possible to view these two terms separately, in reality one must look at both concepts simultaneously for they are closely linked and influenced by similar variables.

The development of self-concept and self-esteem can be viewed through the symbolic interactionism framework. Interactionism, which is based on the work of G.H. Mead, C.H. Cooley, and J. Dewey, views the self as arising in part

from interaction with others (Wells & Marwell, 1976). During the interaction the individual comes to experience himself as others perceive him. If an individual perceives that members of his group consider him to possess certain qualities he will rate himself as possessing more of these traits (Heiss, 1981). Heiss (1981) states that there is a clearly demonstrated tendency for an individual to assimilate these perceptions which others have of him into his own self-concept and self-esteem.

There is not a one to one correspondence between others' perceptions and one's self-concept or self-esteem. The assimilation of perceptions is mediated by a selection process which determines which perceptions will or will not be assimilated. This selection process takes into account such things as the power which one has over the perceiver, the degree of need for self-knowledge, and the degree to which the perceptions allow one to achieve a goal. Thus one will not automatically adopt the attitudes of all others toward oneself but rather will consider these attitiudes and at the same time seek to maintain positive self-esteem (Heiss, 1981). The selection process is complex and will not be developed beyond this brief statement. Suffice it to say that one perceives others' attitudes towards oneself and selectively decides whether or not to incorporate these attitudes into one's self-concept and self-esteem. Theoretical and empirical evidence (e.g., Heiss, 1981) points to the occurrence of this selective assimilation

process in the development of self-concept and self-esteem but does not as yet allow definite causal statements.

For adolescents, the age group of interest in this study, the others whose perceptions will most likely be assimilated will include parents and siblings. Rosenberg (1979) found that regardless of the child's age (8 -18 yrs.), sex, race, or socioeconomic status (SES), the opinion of themselves which mattered most to them was usually that of their mother, their father, brothers and sisters, teachers, friends, and classmates (in descending order of importance). Additionally, on judgements of external qualities such as appearance, intelligence, and morality, 32 - 50% of those over age fifteen would accept their parents' judgement as correct if there was a disagreement between their perceptions of themselves and that of their parents. Heiss (1981) points out that while parents are often the significant others, there will be situations in which someone else's perceptions are more important. However, in general if a disabled teenager responds in ways similar to the non-disabled adolescents studied by Rosenberg (1979), it is mainly through parents and siblings that the disabled adolescent will learn who he/she is and how he/she is valued. How these significant "others" view the disabled adolescent will be discussed in a subsequent section.

Assimilation of the perceptions of others is not the sole means of arriving at one's self-concept and self-esteem. Other means are through evaluating oneself

against one's own standards and through comparing oneself with others. The individual selects particular people with whom to compare himself/herself while ruling out others. He/she sets his/her own standards by choosing to place emphasis on certain aspects of himself/herself, de-emphasizing other aspects. Even in this there is a certain amount of influence from interaction with others. One learns to value the same things as those with whom one interacts through direct instruction or through observation of others' behavior and its consequences (Heiss, 1981). For instance, the disabled adolescent may observe the standard set for siblings and how his/her parents respond to the siblings' efforts to meet those standards. He/she may then choose to place an emphasis on these same areas even if these standards are not attainable and such values may lower his/her self-esteem. McDaniel (1976) reported the disabled to have values or standards similar to the non-disabled despite the fact that this can lead to self-devaluation. Rousso (1981) stated that it was difficult for her as a cerebral-palsied individual to live in society without accepting its definitions of beauty and desirability even if those definitions ended in self-disgust.

Thus it would appear that the self-concept and self-esteem arise out of interaction with others through one's selective assimilation of others' perceptions of oneself, through comparison of oneself with others, and through evaluation against one's own standards. Each of

these sources of development of one's self-concept and self-esteem does not receive equal emphasis. An individual usually places emphasis on those aspects which maximize one's rewards and give one positive self-esteem and a fairly stable self-concept (Bynner, O'Malley, & Bachman, 1981; Heiss, 1981). For example, if one receives consistently negative evaluations when one compares oneself with most others, one would probably place little importance on that area as a source of self knowledge. Instead one might compare one's present performance with one's past performance. Using this differential placement of emphasis maximizes rewards and leads to the maintenance of positive self-esteem.

However, there are many people who do come to negatively value themselves and have a highly variable self-concept. This presents a theoretical problem as the process mentioned earlier should engender positive self-esteem. Rosenberg (1979) has sought to address this issue. He states that this negative self-evaluation can occur when: (a) there are certain objective facts which cannot be ignored (e.g., An adolescent with severely disabling cerebral palsy would have a difficult time ignoring the reactions of others.), (b) one has little or no choice with whom one will interact thus limiting the perceptions available for assimilation (e.g., If an adolescent's parents are consistently negative he probably cannot escape that input.), (c) one cannot choose realistic

self-values (e.g., The disabled may have adopted certain values from their family before realizing that they cannot attain them), (d) one cannot abandon certain traits as unimportant because they are needed to reach goals which one has learned to value (e.g., The disabled could not downplay attractiveness if it were viewed as the means to reaching the goal of marriage), and (e) one cannot ignore values stemming from role definitions such as son, adolescent, etc. (e.g., If one wishes to be part of a group one must adopt the values of the group whether they are positive or negative values). All of these are plausible descriptions of how one might arrive at a negative evaluation of oneself. The disabled were used to illustrate but one should not infer that this necessarily means that they have low self-esteem. The examples merely point out how this might theoretically occur.

In short, the nature of one's self-concept and self-esteem will depend upon the nature of others' perceptions of oneself, the ability one has to be selective in the assimilation of others' perceptions, the availability and nature of comparison others, one's own standards of evaluation, and the presence or absence of the factors listed above. An awareness of these processes in the development of self-concept and self-esteem is helpful as attention now turns to the specific topic of the paper.

This paper seeks to describe the nature of the self-concept and self-esteem of the adolescent physically

disabled by cerebral palsy. Cerebral palsy is a label applied to a group of conditions with heterogeneous etiologies which cause brain damage either before, during, or after birth (Hagberg, Hagberg, & Olow, 1975; Lademann, 1978). The postnatal period may be limited to those conditions which occur before the child is two years of age (Hagberg et al., 1975) or to those occurring before the age of 15 years (Lademann, 1978). This paper limited the postnatal period to conditions which occurred prior to 7 years of age and included the prenatal and perinatal conditions.

The brain damage results in varying degrees of disturbed muscular control manifested as muscle stiffness, uncontrolled and involuntary movements, or balance impairment. The resulting disability can range from very mild (no functional impairment) to complete debilitation, and from not visible to highly visible. Approximately one half of those classified as cerebral-palsied will score in the range of normal intelligence or above (Cruickshank, 1976).

The condition of cerebral palsy was chosen over other disabilities for a variety of reasons. The most important reason from an interactionist's point of view is the manner in which cerebral palsy is viewed. Participants in two studies of social distance (Semmel,& Dickson, 1966; Shears, & Jensoma,1969) were asked to rate various disabilities according to their desire to have a person with a specific

disability as a friend, neighbour, spouse,etc. In both studies cerebral palsy was assigned the least favorable position of all the rated physical disabilities. Two other studies focusing on attitudes toward disability identified cerebral palsy as the least favorably viewed physical disability (Siller as cited in McDaniel, 1976). It would appear then that cerebral-palsied adolescents would experience negative reactions from those with whom they interact on a more frequent basis than would non-disabled adolescents or adolescents with other disabilites. From an interactionist's framework, these negative reactions are likely assimilated into the self-concept and self-esteem of the cerebral-palsied adolescent even though other variables may counteract these negative reactions. In order to determine if these negative reactions were assimilated, this study investigated the cerebral-palsied adolescent's self-concept and self-esteem.

Another reason for selecting cerebral palsy is that limiting the study to one disability group helps to eliminate confounding variables which hamper interpretation of the results. Yet, with cerebral palsy it is still possible to study the effect of varying degrees of disability on self-concept and self-esteem because of the wide range of disability within the diagnostic category of cerebral palsy. Also, there are many cerebral-palsied of normal intelligence which facilitates measurement of the variables. The condition is non-progressive which allows

potential follow-up of the subjects for future studies. Additional reasons for selecting the condition are the relatively small amount of literature in the area and my own clinical experience with the cerebral-palsied.

The period of adolescence, arbitrarily defined here as those who are ages 12 to 18 years, was chosen partially for pragmatic reasons. By adolescence the subject with cerebral palsy has a fairly well-established means of communication which facilitates measurement. In addition, standardized measurement tools are more readily available for this age group. Beyond these pragmatics, adolescence has been viewed as the period of profound physiological changes and changes in role expectations (McDaniel, 1976) which could be expected to influence one's self-concept and self-esteem.

One might now question the potential benefit of a study of self-concept and self-esteem in adolescents physically disabled by cerebral palsy. Coopersmith (1967) has stated that self-esteem is associated with effective functioning and personal satisfaction. Through a clearer understanding of the self-concept and self-esteem of these disabled adolescents, it is hoped that rehabilitative treatment would be better able to focus on deficit and problem areas as well as the individual's strengths and thus increase the effective functioning and personal satisfaction of the adolescent. Insights gained could be shared with families seeking to better understand their disabled teenager. (One parent in the study expressed a deep desire to know the

results for her child as she was unable to communicate with him about how he felt about himself.) Additionally, families with difficulties might be identified for intervention. It is also hoped that this study may help to fill some of the void in current literature in this area, laying the groundwork for future causal studies and adding evidence to the contradictory literature.

In summary, the intent of this paper is to examine in some detail the self-concept and self-esteem of the adolescent physically disabled by cerebral palsy with particular attention being placed on family variables which may influence the self-concept. The self-concept and self-esteem of non-disabled adolescents is also examined for the purpose of making comparisons with the disabled group. Self-concept and self-esteem are measured using the Tennessee Self Concept Scale (TSCS) and the children's version of the Culture-Free Self-Esteem Inventory (CSI). Family relationships are measured using the Family Adaptability and Cohesion Evaluation Scale (FACES II).

II. Review of Related Literature

Before reviewing the literature as it relates to each of the areas mentioned earlier, some clarifications need to be made. Self-concept and self-esteem have been used in the literature with varying degrees of definitional overlap. This variability in the literature can lead to confusion when comparing the results of different studies. Therefore, I have reworded research results (i.e., Flora, 1978; Smith, 1978; Smits, 1964; VanPutte, 1979) when it was possible to ascertain which of the two terms, as defined in this paper, was intended. Otherwise, results were left as originally stated.

Another area of definitional difficulty in the literature is the imprecise usage of such sample descriptors as orthopedically handicapped, brain damaged, or chronically ill. As each of these terms may or may not include the cerebral-palsied, one requires a more complete description of the samples before one can safely make generalizations about the cerebral-palsied based on these studies. In some cases (Battle, Blowers, & Yeudall, 1980; Molla, 1981), the sample is not defined beyond these imprecise terms, and thus findings are related to the cerebral-palsied with a cautionary note.

With these considerations in mind, the literature can now be examined. The first area of interest is the effect of the age period of adolescence on self-concept and self-esteem in general and on the disabled adolescent

specifically. Attention is then turned to studies which have compared non-disabled and disabled adolescents on these variables. This is followed by studies which have looked at the correlation between subject variables (such as severity of disability) and self-concept/self-esteem. And finally the literature relating family variables and self-concept/ self-esteem is examined.

A. Self-Concept and Self-Esteem of the Adolescent

In looking at the impact of adolescence on the self-concept and self-esteem of the non-disabled, the focus of the literature appears to be on issues related to stability and sex differences.

Stability

Some authors view adolescence as a time of developmental crisis and revision of the self-concept (Bax, 1967; Erikson, 1975; Travis, 1976) while others view it as a time of relative stability. Those who hold the crisis and revision position point to such things as the social, physical, psychological, emotional, and cognitive changes which are all occurring at this time. These changes are more radical than at any other time excepting infancy (Kimball & Campbell, 1979). Such changes necessitate changes in one's self-concept which can be viewed as stressful (Lerner, & Spanier, 1980). There are also changes in the role expectations as the adolescent leaves the protected status of childhood and yet is not ready for or is denied the

responsible status of adulthood (Rogers, 1977). This marginal status is associated with a minimum of worth and dignity (Rogers, 1977) so one might expect lower self-esteem in adolescence.

The transition into the newly defined roles can be fraught with inconsistencies and struggles as the adolescent seeks to learn what is expected of him/her and how others view him/her. To illustrate, we can examine one of the developmental tasks of adolescence; namely the ability to attain emotional independence from one's parents (Brier, & Demb, 1981; Havighurst, 1976). This task may result in a struggle over family vacations. The adolescent may now wish to go his/her own way while the parents may want the adolescent to continue as a child within the family unit and share vacations with them. In another area, he/she may seek to develop his/her own standards of dress, morals, or tastes in music. This may provoke a conflict with parental views because the parents continue to view the adolescent as needing direction and protection. Parents, on the other hand, may expect him/her to accomplish household chores or make decisions on his/her own when he/she still wants parental direction. Since the perceptions one is assimilating from others are unclear and conflictual due to these struggles and conflicts, one's concept of oneself might be influenced. Thus, the adolescent develops a variable and confused self-concept.

The profound physiological changes associated with adolescence are also viewed as a major source of variation in the self-concept (Meissner & Thoreson, 1967; McDaniel, 1976; Wright, 1960). At no other time (excepting perhaps old age) is the physical self such a central concern as it is in adolescence (Rogers, 1977). This is also the time when physical attributes such as beauty and strength become important contributors to one's view of oneself (Meissner & Thoreson, 1967). The rate of physical growth relative to one's cohort can be a source of anxiety if one is too slow or too fast (Burns, 1969) especially if one's cohort is used as the standard by which to judge oneself. The influence of rate of maturity seems to have a differential effect on self-esteem for sexes, a point which is touched on later. Physiological changes also alter one's conception of who one is since sexual identity assumes new significance and importance. Travis (1976) has stated that during this period of rapid growth and development the personality is particularly open and vulnerable. Again, all of these factors would seem to point to adolescence as a time of self-concept revision. Thus one would expect that the self-concept of adolescents would be more variable and less stable than in other periods of the life cycle.

Thompson (1972), using the TSCS, found that junior and senior high school students were more uncertain of their self-concepts and had below average self-esteem scores when compared with older age groups (ranging from college

students to senior citizens). A well-designed, 8 year longitudinal study which began with grade 10 boys (Bachman & O'Malley, 1977) found an increase in self-esteem as measured by Rosenberg's Self-Esteem Scale. This study, which controlled for such factors as attrition and testing effects, lends support to Thompson's statements. Further support comes from McCarthy and Hage (1982). In reviewing the literature they found that longitudinal studies consistently showed increases in self-esteem with age across adolescence while cross-sectional studies were less consistent in showing increases. One cross-sectional study (Osborne & LeGette, 1982) reported a significant increase in general self-esteem, social self-esteem, and popularity from grades 7 to 11. Global self-esteem measures (Piers-Harris and Coopersmith) showed an upward trend but no significant differences.

Others have found that the period of greatest instability of the self-concept actually occurs amongst those ages 9 - 11 years or just prior to adolescence (Protinsky & Farrier, 1980). Travis (1976) and Rosenberg (1979) have pointed to early adolescence (ages 12 -14) as the period of greatest instability and Bynner et al.(1981) found the greatest pressures on self-esteem to occur during this period. Thus these authors view adolescence as relatively stable when compared with preadolescence and early adolescence which introduces a second perspective.

This view challenges the conception of a developmental crisis or revisionary period during adolescence. These authors hold that one's overall self-concept and self-esteem remain relatively stable over adolescence (Burns,1979; Coopersmith,1967; Dusek & Flaherty, 1981; Ellis, Gehman, & Katzenmeyer, 1980; Larned & Muller, 1979). Only specific areas experience any revision. These specific areas are reported as: (a) self-consciousness [According to Protinsky & Farrier (1980) this peaks at ages 15-16.], (b) self-acceptance [According to Ellis et al (1980), at ages 15 -16 years there is a shift from placement of emphasis on external standards of achievement to a subsequent emphasis on internal standards.], and (c) academic success and school adaptiveness [According to Larned and Muller (1979) there is a decline in self-esteem in these areas.]. The other areas of self-concept and self-esteem are reported to experience no significant changes during adolescence.

Dusek and Flaherty (1981) reported a 3 year longitudinal study of adolescents (grades 5-12) which indicated that the self-concept developed in a stable and continuous manner. This finding was based on a high degree of factor stability across grades. They concluded that change on an individual basis might cause temporary discontinuity but that overall change occurred slowly during adolescence with the qualitative aspects of the self-concept remaining the same. The validity of cross-sectional studies of the adolescent self-concept was questioned and they felt

that on the basis of their findings adolescence could no longer be viewed as a time of storm and stress.

From the current research, it is difficult to support one position or the other unequivocally. However, recent literature seems to be swinging away from the storm and stress view of adolescence with some cautionary notes. Change and stress do occur in adolescence but the impact of that stress and change is variable. Some aspects of the self-concept and self-esteem do undoubtedly experience revision and the earlier part of adolescence (ages 12-16) may be the period of greater adjustment. On an individual basis, adolescence may be a difficult time of temporary discontinuity and lowered self-esteem.

For the disabled, adolescence may be a time of exaggerated developmental crisis (McDaniel, 1976). Reynell (1973) in a longitudinal study of the cerebral-palsied from birth to the end of adolescence, found that the most stress occurred during adolescence. She reported the primary sources of this stress as being an increased awareness of social limitations (cf. Freeman, 1970; Shakespeare, 1978), an awareness of the permanence of the handicap (cf. Bryan & Herjanic, 1980; Freeman, 1970), and an awareness limitations of activity (cf. Bryan & Herjanic, 1980). Based on his clinical experience, Freeman (1970) stated that during adolescence previous adaptation was threatened by an actual physical deterioration due to the growth spurt, an increased awareness by peers of the difference between themselves and

the cerebral-palsied, and the awareness that school programs and special services would no longer be available when they turned eighteen. If, in addition to these stresses, the cerebral-palsied individual experiences all the same stresses as the non-disabled adolescent, it is not surprising that adolescence is sometimes seen as the most difficult period for the cerebral-palsied and relatively more difficult than for the non-disabled adolescent. Cerebral-palsied acquaintances have certainly felt this to be true. One would expect that some of these stresses would lower the self-esteem of the cerebral-palsied. For instance, as they come to recognize the full extent of their limitations and experience rejection in social areas, they may come to view themselves as having less worth and value.

The disabled adolescent, in addition to receiving conflicting answers regarding his/her adolescent status, also receives conflicting answers regarding his/her normality or abnormality (Minde, Hackett, Killou, & Silver, 1972). In one situation (e.g., a rehabilitation setting) the focus may be on normal aspects. In another situation (e.g., in public) he/she may be treated as totally abnormal. Thus the disabled would appear to experience a greater number of conflicting perceptions regarding their status than the non-disabled experience. As one learns who one is through interaction the dual identity created may result in internal and external conflicts (Minde et al., 1972). Indeed Nussbaum (1962) found that the cerebral-palsied adolescent had little

reality orientation in any of the self-concept areas he measured (i.e., task performance, social capabilities, vocational potential, and overall intelligence). Richardson (1972) outlined case histories of cerebral-palsied individuals illustrating the difficulty they experienced in arriving at a sense of who they were. Their whole identity had been defined as cerebral-palsied (cf. Rousso, 1981). Travis (1976) has pointed out that the sense of being different is the basis of difficulties in achieving a stable identity for the chronically ill adolescent.

In summary, one would expect the cerebral-palsied adolescent to experience difficulty in the areas of self-concept and self-esteem when they experience two marginal statuses simultaneously (i.e., adolescent and abnormality). It would be expected that there would be variablity and conflict in their self-concept scores and that this variability and conflict would be greater than that of the non-disabled adolescent.

Sex Differences

It is now appropriate to turn to sex differences in the self-concept and self-esteem of non-disabled adolescents. Using Rosenberg's Self-Esteem Scale or Coopersmith's Self-Esteem Inventory (overall self-esteem measures), several authors found that girls have lower self-esteem than boys (Kellerman, Zeltzer, Ellenberg, Dash, & Rigler, 1980; Simmons & Rosenberg, 1975) and that this difference did not exist prior to adolescence (Jaquish & Savin-Williams, 1981;

Lawson, 1980; Simmons & Rosenberg, 1975; Smith, 1978). Entering junior high school was associated with a decrease in self-esteem for girls as measured by Rosenberg's Self-Esteem Scale (Simmons, Blyth, VanCleave, & Bush, 1979). Girls showed more self-consciousness and a greater instability of self-concept, as measured by the Stability of Self Scale, than was evidenced for boys (Simmons & Rosenberg, 1975). This cross-sectional study of children in grades 3 to 12 found that the difference between boys and girls on the amount of disturbance of self-image increased with age across adolescence.

Authors seeking to explain this difference between the sexes have cited differing values and differing emphasis on aspects of the self. While attractiveness is important to both sexes it was found to be a more significant predictor of self-concept (as measured by a semantic differential scale) for females than males (Lerner, Orlos, & Knapp, 1976) and a more important determinant of satisfaction with the female's social milieu (Pomerantz, 1979). For boys, effectiveness of body parts was a more significant predictor of self-concept than was attractiveness. This was interpreted as being due to the fact that males place less emphasis on interpersonal relationships and that attractiveness is a more interpersonal variable (Lerner et al., 1976). The physical changes associated with puberty may cause the female to be less certain of her attractiveness as Simmons et al.(1979) and Jaquish and Savin-Williams (1981)

found that early puberty for girls was associated with lower self-esteem whereas for boys early puberty was associated with higher self-esteem. In addition to placing more emphasis on attractiveness, girls tend to place more emphasis upon social interaction for validation for their self-concept (Burns, 1979; Dusek & Flaherty, 1981) and are more aware of what others think of them (O'Donnell, 1979). Since our culture does not value feminine traits as much as masculine traits, females may thus learn that they have less value in society.

Despite the evidence supporting sex-related differences in self-concept and self-esteem in adolescence and the explanations available for the differences, the findings are not unanimous. Two studies found that females had higher self-esteem than did males (Gecas, 1971; Protinsky & Farrier, 1980) and Osborne and LeGette (1982) list other studies with similar results. One study, using Coopersmith's Self-Esteem Inventory (Hanes, Prawat, & Grissom, 1979), and another which used Keeves' Self-Esteem Scale (Moore & Rosenthal,1980) reported no difference between the sexes during adolescence. Osborne and LeGette (1982) in reviewing the literature reported several studies which showed no consistent sex differences. Their own research showed no differences between males and females on global self-esteem (as measured by Piers-Harris Children's Self-Concept Scale and Coopersmith's Self-Esteem Inventory). It was only on specific subscales that they found a difference between

sexes. Males scored significantly higher on a physical appearance subscale but lower on behavior and social subscales than did girls. Dusek and Flaherty (1981) looked at four different aspects of the self-concept rather than looking at an overall measure of self-concept. They found that males scored consistently higher on achievement/leadership and masculinity/femininity dimensions and consistently lower on congeniality/sociability dimensions when compared with females.

While the literature is not unanimous on sex differences in self-concept and self-esteem the more recent literature, using measures which look at dimensions of self-esteem as opposed to global self-esteem, suggests that there may indeed be consistent subscale differences. Thus females are expected to score higher than males in social areas but lower in physical or leadership areas. One cannot predict if there will be differences on the overall measures.

For the disabled, the findings are fairly unanimous. Using the Piers-Harris Children's Self-Concept Scale (Bishop, 1977) or Rosenberg's Self-Esteem Scale (Kellerman et al., 1980), disabled females scored lower on self-esteem than similarly disabled adolescent males. This was found to be especially true when the disability was highly visible and the subject viewed the disability as a serious problem (Meissner & Thoreson, 1967).

B. Comparative Studies

Studies which have compared disabled and non-disabled adolescents will now be reviewed. Several of these studies compared the two groups in terms of maladjustment. Maladjustment was defined as either a lack of self-confidence, depression, self-consciousness (Anderson, 1979; Kirk, 1972) or social and emotional difficulties (McMichael, 1971; Pringle, 1980). Researchers who have looked at the physically disabled (Kirk, 1972; McMichael, 1971) reported that disabled groups have significantly higher rates of maladjustment and behavioral or emotional problems. Dorner (1976) reports that, based on interviews, a greater percentage (25%) of female adolescents with spina bifida had suicidal ideas (one had attempted suicide) when compared with female non-disabled adolescents (8%). For the cerebral-palsied, the area of maladjustment particularly mentioned was that of social relations. Based on her personal experiences as a cerebral-palsied individual and on her clinical experience counselling disabled individuals, Rousso (1982) stated that for many social life comes to a standstill in adolescence. Using interview techniques, Anderson (1979) found that only 21% of his cerebral-palsied sample had a satisfactory social life and that 80.2% of the cerebral-palsied (as opposed to 27.3% of the non-disabled) had never gone out with a member of the opposite sex. One would expect that these generally higher rates of maladjustment would lead to differences between the disabled

and non-disabled adolescent in the areas of self-concept and self-esteem.

This would indeed appear to be true as McDaniel (1976) reports almost universal support in the literature for the position that the physically disabled have a lowered self-esteem and Minde (1978) reports low self-esteem amongst the cerebral-palsied adolescents he interviewed. Molla (1981) in reviewing the literature, also found a more disturbed self-image amongst the disabled as measured by projective drawing tests.

However, differences between the disabled and non-disabled are not always found. Nielsen (1975) used interviews with cerebral-palsied adolescents to show that emotional disturbances or maladjustment occurred at similar rates for the cerebral-palsied and non-disabled. Kellerman et al. (1980) found no significant difference between normal adolescents and the chronically or seriously ill adolescent in the area of self-esteem. No cerebral-palsied were included in this sample. A study by Battle et al. (1980) also found no difference between those with brain dysfunction and normals as measured by the the CSI. However, this study did not define brain dysfunction or the degree of impairment clearly and gave no details of sample selection. Molla (1981), using the Piers-Harris Children's Self-Concept Scale, found overall similarities between a group of orthopedically disabled children and non-disabled children. All of the children were of normal intelligence or above and

were in grades two to six. However, on subtests the disabled were less happy, more of them felt that they were not meeting the expectations of their parents, and more were less positive in regards to their intellect and school status. McFern's study (1974) of various disability groups (not including cerebral-palsied) also found overall similarities between the self-concepts of the groups with differences on specific variables of self-concept.

McFern's (1974) study merits further attention as he used the TSCS in his study. He found that both non-disabled and disabled adolescents had negative self-esteem overall and especially in the family area. His orthopedically disabled group which would most closely resemble the cerebral-palsied had the most positive mean profile of the groups (blind, deaf, and normals), had their lowest score in the physical area, had the highest variability, and were the most defensive. This latter finding may account for the fact that the group had a higher mean profile. One of the weaknesses of his study is that his statistical analysis did not include determining of the significance of the differences between groups.

In summary, the literature suggests that cerebral-palsied adolescents may have lower self-esteem than the non-disabled adolescents in specific areas such as social relations and physical self-esteem. One might expect the cerebral-palsied to have greater variability and conflict than the non-disabled.

C. Subject Variables

Subject variables are traits which a subject brings with him/her to a study. The subject variables of interest are: severity of disability, attitude towards the disability, educational background, socioeconomic status, and intelligence.

Severity of disability

The relationship between severity of disability and self-concept/self-esteem has drawn much attention in the literature though the results are less than conclusive. McMichael (1971), who surveyed 50 handicapped children (21 cerebral-palsied) and their families, stated that the more severely handicapped person will have more difficulties in adjustment than the mildly disabled person. Pringle (1980) and Smits (1964) gave similar conclusions. Smits (1964) found that the severely disabled person had lower self-esteem and using the Bills' Index of Adjustment and Values, both he and Meissner and Thoreson(1967) found that the greatest impact was on the severely disabled female with a readily apparent handicap. Impact was determined by the subject's response to a question asking if they perceived their disability as a serious problem. Meissner and Thoreson (1967) also found that the greater the severity of the disability, the more likely one was to give a socially desirable response to questions and this was especially true for males.

In contrast, Nielson (1975) and Shakespeare (1975) state that those with mild disabilities are more affected due to their marginality. The mildly disabled fit neither into the normal or the disabled group. Individuals with mild disabilities experience more inconsistent demands and expectations leading to confusion (Bryan & Herjanic, 1980). And still others (Bishop, 1977; Kellerman et al., 1980; Starr & Heiserman, 1977) found that severity and visibility of the handicap did not influence self-esteem.

Attitudes towards their disability

Another variable, acceptance of disability, has been measured using the Acceptance of Disability Scale (Linkowski & Dunn, 1974). Using the Self-Ideal Q-Sort (Linkowski & Dunn,1974) and Rosenberg's Self-Esteem Scale (Starr & Heiserman, 1977), acceptance of disability has been found to be positively correlated with self-esteem. As Linkowski and Dunn (1974) pointed out, the perception of disability is a central aspect of the disabled person's self-concept. If he/she has not come to terms with the disability self-concept will be less favorable than if he/she has dealt with the issue.

Educational background

Another area of interest in the literature has been the relationship between self-concept/self-esteem and the educational setting (regular vs. special vs. residential). Using Dr. L. Curtis' Rating Scale or Piers-Harris Children's Self-Concept scale, three researchers all reported no

significant differences between the self-concept/ self-esteem scores of disabled adolescents in the various educational settings (Bishop, 1977; Lambright, 1967; VanPutte, 1979). However, Youssef (1979) using the Piers-Harris and a Q-sort, found that those in special education settings had lower self-concept scores than those in regular schools. These findings were unexpected, for using interactionism one might expect that those in a regular setting would have more exposure to negative attiudes from non-disabled peers thus lowering their self-esteem. This interaction of educational setting and self-esteem is of minor interest in this study as most of the subjects were in regular schools. The issue was merely introduced so that one could be aware of the possible effect.

Socioeconomic status

The next subject variable is socioeconomic status (SES). Again the findings are inconclusive (cf. Filsinger & Anderson, 1982). Filsinger and Anderson (1982) found no significant correlation between one's SES and self-esteem as measured by Rosenberg's Self-Esteem Scale. However, they did find a significant positive correlation between one's best friend's SES and one's own self-esteem. Thus the social status of significant others may have an influence on self-esteem though causality cannot be implied. According to Rosenberg (1979), SES does not appear to influence the self-concept/self-esteem of the non-disabled adolescent.

Bachman (1970) found a very weak but positive relationship between SES and self-esteem for non-disabled adolescent males. VanPutte (1979), in a study of physically disabled children ages 7 - 15 years, found that higher SES was associated with lower self-esteem for the older age groups but he did not specify exact ages.

Osborne and LeGette (1982) did find a significant relationship between self-concept and SES as measured by Hollingshead's Index. On two self-concept measures (Piers-Harris and Coopersmith) there was a significant upward trend as one moved from the lower classes to the upper classes. The global measures and the subscales of general self, behavior, and intellectual self-esteem all followed this pattern. While the researchers did control for race differences, they did not check for the interaction factor for sex or grade level (girls-N=214, boys-N=160).

The findings are indeed inconclusive and one of the reasons for this may be the difficulty in creating or finding a scale which reflects the rapid economic changes of the past years. Blishen (1976; 1978) has developed a SES scale for male and female Canadians which includes education, income, and prestige and places occupations into six classes. This scale, while still an imperfect measure of what may be a nebulous concept, was used in this study. While subjects were not matched on SES, the variable was measured for possible posthoc analysis.

Intelligence

Intelligence, defined here as IQ, is another variable whose influence on self-esteem is unclear. There is no challenge to its strong correlation with school self-concept as measured by Ammons Quick Test and Raven's Progressive Matrices (Bachman, 1970; Henein, 1978) but the relationship to overall self-esteem is open to question. Bachman (1970) found only a "modest positive correlation" (p. 202) while a study of learning disabled children using the WISC-R (Smith, 1979) found no significant relationship. Using his inventory and the WISC-R, Coopersmith (1967) found that the children in his study were significantly different on IQ. A child in the low self-esteem group had a lower IQ score than a child in the medium self-esteem groups and those in the medium groups were lower than those in the high self-esteem group. There was one exception. The group with the highest mean IQ had a low subjective self-esteem but were rated by others as having high self-esteem.

In summary, the literature on subject variables appears to be inconclusive in the areas of SES, IQ, educational setting, and severity of disability. Acceptance of disability, on the other hand, does appear to be positively correlated with self-esteem.

D. Family-Related Variables

The last area of literature to be examined deals with family relationships and the adolescent's self-concept/self-esteem. As mentioned in the introduction,

the parents of the adolescent have a profound impact on how the adolescent views himself/herself. Indeed several authors (Lukens, 1969; McMichael, 1971; Pringle, 1980) have noted that the attitudes of the parents toward the disability are more important in determining the ultimate outcome for the child than is the nature and severity of the handicap. It is through the family that the individual learns how he/she is viewed by others and gains some sense of self-worth and a sense of who he/she is.

This link between parental attitudes and various aspects of the child's evaluation of self has prompted some research on self-concept/self-esteem of the non-disabled adolescent as it correlates with family variables. A positive linear relationship has been found between parental support and the adolescent's self-esteem (Gecas, Thomas & Weigert, 1970). Both Bachman (1970) and Gecas (1971) found a positive relationship between self-esteem and good family relations with the latter being defined by the presence of affection between members, common activities, fairness, and inclusion of family members in decision making. The relationship was strongest for girls (Gecas, 1971). Coopersmith (1967) found that the conditions associated with high self-esteem were parental acceptance of the child, defined limits for behavior, and room for individual action within the limits.

Flora (1978), using the Parent-Adolescent Communication Inventory and TSCS, found that adolescents who received

communication from their parents which they viewed as non-constructive or harsh, rejecting or judgmental, generally had lower self-esteem. Adolescents with lower self-esteem generally felt misunderstood by their parents (Bledsoe & Wiggins, 1973).

Thus it appears that if one is to make predictions about the self-concept and self-esteem of the cerebral-palsied, one must determine the nature of their family relations. In order to compare the disabled and the non-disabled on these family variables one must know how their family relations, as defined earlier, differ.

Podneau-Czehofsky (1976) in a survey of 65 families with a cerebral-palsied child, found that 80% had problems. These problems ranged from excessive attention to overt rejection of the child with attempts to abandon him/her. This would appear to be a higher incidence than in the general population though data for comparison is not available. Minde (1978) also found a high incidence (73%) of sibling discord among these families though again no comparative data is available.

It is difficult to generalize about the parent-child relationship in the families of the disabled for there is much variation. One set of parents or even one parent may be warm and accepting, valuing the adolescent and seeking to understand him/her. Others may be openly rejecting (Thomas, 1978). McMichael (1971) reports that 31% of the parents studied showed moderately-severe to severe degrees of

rejection of the child. A lack of involvement on the part of fathers is noted by some authors (Connor, 1971; Webster, 1976) and the handicapped do feel more neutral towards their fathers than do the non-disabled (Thomas, 1978). Minde (1978) found that 20% of the fathers of the disabled which he studied refused to meet the emotional needs of the adolescents. In contrast, one study found that the fathers are involved to the same extent in families with a cerebral-palsied member as in normal families (Hewett, Newsom, & Newsom, 1970). It does appear that the majority of studies indicate that the fathers are less involved with disabled adolescents. One would expect that this paternal lack of involvement and neutrality would decrease the adolescent's sense of self worth.

Generally, disabled adolescents appear to have better relationships with their mothers than do the non-disabled (Thomas, 1978). Harper (1977), in a study of mothers, found that overall, normal adolescents perceive their mothers as more intrusive and possessive than do the cerebral-palsied. For the latter group he did find that as the degree of disability increased the degree of perceived maternal intrusiveness also increased. He did not compare the more severely disabled cerebral-palsied with the normals to determine if the difference persisted since his severely disabled group was very small. As such there may be a point at which the disabled have similar attitudes to the non-disabled as one moves along the continuum from mildly

disabled to severely disabled.

Parents of the disabled seem to have more extreme attitudes towards their children than do the parents of the non-disabled (Kirk, 1972). One of these attitudes which has been repeatedly reported in the literature is overprotection or giving the child more attention than his disability requires and more than is given normal siblings (Abramson, Ash, & Nash, 1979; Connor, 1971; Heisler, 1972; Howard, 1978; Knott, 1979; Travis, 1976; Young, 1977). This overprotectiveness does not appear to be perceived by many disabled adolescents since the mothers are not viewed as overly intrusive or possessive (Harper, 1977). The more severely disabled did tend to perceive more intrusiveness but this may be attributed to the greater physical care needs of these adolescents, more frustration over inabilities, or perhaps even worse treatment by the parents in terms of possessiveness or intrusion.

It is not known how this overprotectiveness influences the self-esteem of the disabled. From one point of view, one might expect this attention to increase feelings of self-worth for the child might view himself as important and meriting extra attention. On the other hand it might decrease feelings of competency as parents may refuse to allow the child to attempt a wide range of activities in order to avoid failure experiences.

Further evidence of more extreme family relationships comes from McCubbin and Patterson's (1981) study of families

with a cerebral-palsied child. Using the Family Adaptability and Cohesion Evaluation Scales (FACES) they found that 40% of the families had extreme scores on both cohesion and adaptability as opposed to 15% of the normative population. Moderate scores are taken to signify healthy balanced families and extreme scores are associated with less healthy families (Olson & McCubbin, 1982). As the balanced families had the lowest level of stress and highest levels of satisfaction, it could be assumed from an interactionist's perspective that adolescents from these families would have higher self-esteem (cf. Gecas, 1971). This relationship has not been established in the literature.

Communication between the parent and the disabled adolescent appears to be restricted in certain areas. This may be due in part to actual physical limitations which make in-depth communication difficult. However, Minde (1978) reported that 60% of the parents had no idea what the child thought about his handicap or the future and did not attempt to discuss these areas. These were also areas that the parents discussed relatively little with each other. On some measures parents tended to perceive their child's self-concept as lower than it actually was (Youssef, 1979). This might signify impaired communication and a lack of understanding as to how the child actually views himself/herself. Nussbaum (1962), in a study of cerebral-palsied adolescents and their mothers, found that the mothers were more realistic about their adolescents'

actual abilities than were the adolescents. This might be seen as another indication that mothers don't communicate their perceptions to the child.

All of these findings allow one to make only equivocal predictions in regards to the influence of family relations on the self-concept/self-esteem of the cerebral-palsied adolescent. The family relations of the disabled appear to be different from those of the families of non-disabled adolescents in seemingly unhealthy ways. Exactly how these differences influence the variables under study is not known. The literature suggests that as with non-disabled adolescents, a positive perception of family relations is positively correlated with self-esteem for the disabled. It is also expected that family cohesion scores are more extreme for the cerebral-palsied than for the non-disabled.

III. Statement of the Problem

Based on the preceding literature the following questions were considered to be of primary importance in the study:

1. Will there be a difference between the disabled and non-disabled adolescents on overall self-esteem as measured by the total Pscore of the TSCS? The literature suggests that there will be no significant difference on this overall self-esteem measure.

2. Will there be a significant difference between males and females on overall self-esteem as measured by the Pscore of the TSCS? Again the literature suggests that a difference may only be found on specific subscales.

3. Will there be a difference between the cerebral-palsied and the non-disabled on physical self-esteem as measured on the TSCS? It is expected that on this subscale the cerebral-palsied will be significantly lower.

4. Will there be a difference between the cerebral-palsied and the non-disabled on social self-esteem as measured on the TSCS? Based on the literature one expects the cerebral-palsied to be significantly lower on this subscale.

5. Will there be a difference between the cerebral-palsied and the non-disabled on personal self-esteem as measured on the TSCS? There is no literature directly pertaining to this question.

6. Will there be a significant difference between the cerebral-palsied and the non-disabled on family self-esteem as measured on the TSCS? The literature in this area does not allow one to make a prediction of difference between the groups.

7. Will the cerebral-palsied have greater conflict than the non-disabled as measured on a TSCS subscale? One expects that the cerebral-palsied will experience more conflict.

8. Will the more severely disabled be more defensive than the mildly disabled and will the cerebral-palsied be more defensive than the non-disabled as measured by the self-criticism scale of the TSCS? One expects the cerebral-palsied to be more defensive than the non-disabled especially if they have self-esteem scores similar to the non-disabled.

9. Will there be a significant difference between the cerebral-palsied and the non-disabled on cohesion scores as measured by FACES II? Based on the literature, one expects the cerebral-palsied to have more extreme scores.

10. Will there be a difference between the cohesion groups identified by FACES II on Pscores of the TSCS when disability and sex groups are combined? Based on the literature, it is difficult to make a prediction.

Of secondary importance is the question related to the tools used in this study. The adult version of the CSI has already been shown to be significantly correlated with the TSCS when both are used with an adult university-educated

population (Kernaleguen & Conrad, 1980). In this study, the child's version of the CSI was compared with the TSCS using an adolescent population. If these two measures are found to measure the same variables, the TSCS could be used for adolescents and adults and the CSI for preadolescents in cross-sectional sequential studies. Therefore the last question addressed in this study was:

11. Are the TSCS and the child's version of the CSI significantly correlated?

IV. Methods and Procedures

A. Sample

The disabled sample consisted of all those adolescents ages 12-18 years physically disabled by cerebral palsy who could be located in the Edmonton area. This purposive sample included ten students (6 females, 4 males) from the public schools, six students (3 females, 3 males) from the separate schools, and six students (2 females, 4 males) from county school systems.

While the sample was limited to those with a clinical diagnosis of cerebral palsy prior to seven years of age, all of the subjects had actually had cerebral palsy since birth. Individuals with additional disabilities such as blindness or deafness were not included. Those with a history of asthma (n=1) or minor sight defects which were correctible with lenses (n=3) were included. For details of the type and degree of cerebral palsy see Appendix B-6.

Once the cerebral-palsied sample was selected an equal-sized sample of non-disabled adolescents was selected. For each of the disabled, a non-disabled subject was matched by sex, age and IQ. For the pairs of yoked subjects the average age difference was 4.1 months with only three pairs more than 5 months apart (9, 11, or 14 months age difference). The average IQ difference was 3.9 (ranging from 0 to 8 IQ points). Overall the non-disabled and disabled groups were within 1 IQ point (100 vs 101) and .2 years

(15.6 vs 15.8).

The subjects were also chosen from the same school to partially control for educational background and SES (Rosenberg, 1975). This proved to be an adequate method as the groups were fairly equivalent on SES (see Appendix B-3). SES was measured by ascertaining the occupation and education of the parents and ranking them using the Blishen scale (1976). Other subject variables such as type and frequency of medication use and religion were recorded but again subjects were not matched on these variables. The groups did prove to be basically equivalent in amount of religious activity and religious affiliation. Information on these subject variables is summarized in Appendix B.

All subjects, disabled and non-disabled, had at least grade six reading abilities (as measured by the Canadian Test of Basic Skills or the Schonell English Usage Test) and had an IQ of 80 or above (as measured by the Canadian Lorge-Thorndike Intelligence Test, the Canadian Cognitive Abilities Test, or the Wechsler Intelligence Scale for Children). The average IQ was 101. Details of the range of IQ scores can be found in Appendix B-1.

All the subjects had to reside with at least one parent. This parent could be natural, adoptive or foster but the child must have resided with that parent for at least the past five years. Details of the family background can be located in Appendix B.

B. Materials

Two paper and pencil scales were used to measure self-concept and self-esteem. An additional scale was used to measure family variables and a questionnaire was used to gather basic demographic information.

Tennessee Self-Concept Scale

The TSCS consists of one hundred self-descriptive items. In designing the scale, Fitts (1965) drew items from unspecified pre-existing self-concept scales and self-descriptions of patients and non-patients. Seven clinical psychologists then classified the items and only those items which were unanimously classified into the various subscales were retained.

The TSCS is an ordinal Likert-type index with five possible responses for each item. This was one of the most positive features of the scale from the point of view of my sample. Half of the items are stated negatively and the other half are phrased positively to avoid an acquiescent response set. The scores of interest from this scale were: (a)self-criticism, (b) Pscore (overall level of self-esteem), (c)physical self (view of health, appearance,and sexuality), (d) personal self (personality apart from body and roles), (e) family self, (f) social self (in relation to more general relationships), and (h) conflict (confusion and contradiction).

The scale was standardized using a non-disabled sample of 626 Americans having at least a grade six reading ability

and included an equal number of males and females and blacks and whites. Ages ranged from 12 to 68 years and all social and economic levels were represented. A fairly strong test-retest reliability was demonstrated in that 70% of the coefficients were 0.80 and above with the range being from 0.67(variability) to 0.92 (overall self-esteem).

The issue of concurrent validity has been addressed by pointing to the scale's ability to differentiate persons whom one would expect to have different self-concepts. The scale differentiates psychiatric patients from non-patients and delinquents from non-delinquents (Fitts, 1965). It also differentiates between diagnostic groups as confirmed by clinical diagnoses and correlates with scores on the Minnesota Multiphasic Personality Inventory in the predicted manner. Moderate and significant correlations were found for the TSCS and the Rosenberg Self-Esteem Scale, the Canadian Self-Esteem Inventory for Adults (former name of the Culture-Free Self-Esteem Inventory), the Index of Adjustment and Values, and the Body Cathexis Scale (Kernaleguen & Conrad, 1980).

The main criticism of the scale has been in regards to the factors which it purports to measure. While there has been no criticism of the overall self-esteem measure, the controversy seems to center on the number of independent variables or factors. One study (Vacchiano & Strauss, 1968) found twenty interpretable factors and another (Bolton, 1979) found that only five subscales (moral, personal,

family, social, and particularly physical) accounted for enough variance to merit individual use. On the other hand, Lang and Vernon (1977) and Wylie (1974) point to sizable redundancy and a fair amount of intercorrelation of items across factors suggesting that the TSCS is not discriminating accurately amongst the five subscales mentioned earlier.

Boyle and Larson (1981) analyzed TSCS scores of 255 disabled veterans and found that: (a) family items load on a separate factor, (b) the self-criticism scale loads on another, (c) physical self-esteem items load on two factors which could be termed health and attractiveness, and (d) conflict, variability, and distribution scores load on one factor.

Despite the criticism, the TSCS still appears to be one of the better instruments available especially for measuring overall self-esteem, family self-esteem, defensiveness, and physical self-esteem. It has been used extensively (Fitts, 1972a; 1972b; Flora, 1978; Thompson, 1972; Wylie, 1979) and has been used with the disabled (Flatley, 1973; McFern, 1974) which is an asset.

While the average person requires 13 minutes to complete the scale, for this sample the non-disabled required an average of 16 minutes and the disabled required an average of 21 minutes. This longer average time for completion may have been due to the fact that the participants were all adolescents and might be expected to

read more slowly than older groups who composed the majority of the standardization sample. For the disabled their physical impairment probably slowed their response times.

The scale requires a grade six reading ability making is appropriate for use with subjects in this sample. Some cerebral-palsied and non-disabled subjects from both junior and senior high schools had difficulty with the meaning of the term moral failure used in one of the questions. There were also some items which required some explanation. For instance, the item "I am a sick person" could be taken in either physical terms or psychological terms. The items "I am popular with men/women" elicited unexpected responses in terms of the homosexual overtones. It is not clear that this was the author's original intention.

Culture-Free Self-Esteem Inventory

The CSI was developed by Battle (1981) and contains 60 items. Ten of the items form a lie scale which measures defensiveness or the tendency to give socially desirable responses. There is no normative data available for this scale. The other 50 items examine the areas of general, parental, social, and academic self-esteem. Response choices are simply yes or no which many of my subjects found frustrating.

Items are phrased to require either yes or no responses in order to avoid a response set. In some cases the subject had difficulty deciding how to answer a question because of the negativeness. For example, a question such as "I have

never taken anything that did not belong to me" was difficult to answer for some students who wanted to indicate that they had taken something. Seven of the ten items on the lie scale were phrased in this negative fashion.

The test was standardized in Edmonton which was also the area from which my sample was drawn. There is no information given in the manual on the selection procedure used in obtaining the standardization sample. The sample consisted of 315 boys and girls from grade 3 to 9. Test-retest reliability is based on coefficients ranging from 0.81 to 0.91. An Alpha(kr 20) analysis of internal consistency found coefficients ranging from 0.66 to 0.76.

Content validity was built in by writing items based on a definition of self-esteem and choosing the sixty most discriminating items from a pool of 150 items. The CSI is significantly correlated with Coopersmith's Self-Esteem Inventory, Beck's Depression Inventory, and the Minnesota Multiphasic Personality Inventory (Battle, 1981). Other correlations with the adult form of the CSI were mentioned in the discussion of the TSCS. The scale was successfully used in one study of non-specifically defined brain dysfunctional children (Battle et al., 1980).

Non-disabled subjects required an average of 6 minutes to complete the scale and disabled subjects required 9 minutes. Battle (1981) stated that 10 to 15 minutes were required to complete the scale.

Family Adaptability and Cohesion Evaluation Scale

The adolescent form of FACES II was used to examine family variables. This self-report index was developed by Olson, Portner, and Bell (1982) and is a shortened version (30 items) of the original 111 item scale. The subject chooses from five response categories for each item. The scores are then used to identify the perceived cohesion (the amount of bonding of family members) and perceived adaptability (the ability of the family to change in response to stress) of the family (Olson, Sprenkle, & Russell, 1982). Extreme scores, or those which fall either below or above the middle range of 16 points, are indicative of a family which may presently or in the future experience problems.

The normative range was derived from use of the scale with 2,082 parents and 416 adolescents in a national survey in the United States (Olson, McCubbin, Barnes, Larsen, Muxen, & Wilson, 1982). Factor analysis located one factor for cohesion and one for adaptability for this sample. Chronbach reliability figures for the respondents were 0.90 for the total scale, 0.87 for cohesion, and 0.78 for adaptability. Four to five week test-retest reliability was only done for a 50 item version of the scale and a correlation of 0.84 was found.

For the purpose of this study cohesion was the variable of most interest. However adaptability scores were collected and can be found in Appendix C. Families were classified into one of three groups based on the cohesion score of the

adolescent member: (a) balanced which represents the collapsing of the separated and the connected categories and included 62.2% of the normative sample, (b) enmeshed which represented 20.2% of the normative sample or (c) disengaged which represented 17.6% of the normative sample. Families falling into the latter two categories were viewed as having the potential for problems.

The non-disabled subjects in my sample required an average of 6 minutes to complete the scale as did the cerebral-palsied. No average time for completion is given in the manual.

It was also noticed that some of the words required a fairly advanced reading level(e.g., discipline). One item, "Our family gathers together in the same room.", had to be interpreted for some subjects as the item fails to recognize that this gathering together may be from necessity rather than from choice. For instance, the only television set may be in that room or the apartment may be so small that there is nowhere else to go. Questions as to what constituted a family or a problem were also raised by the subjects.

Demographic Questionnaire

A questionnaire was developed for the study to obtain basic demographic information required to compare the disabled and non-disabled and to allow for possible follow-up. All subjects answered questions dealing with such areas as medications, future plans, religious activity and background, avocational interests, and the number and type

of illnesses which they had experienced in the last month.

Because of ethical concerns expressed by one school system, information about the family situation had to be obtained indirectly. Sometimes this information was available on the school record and sometimes it came out in response to questions regarding the occupation of the parents. Information regarding the student's IQ and reading ability was obtained from school records.

The cerebral palsied who were aware of the fact that they had cerebral palsy (7 of the subjects were not aware) answered additional questions related to the severity of their disability and their understanding and acceptance of their condition. A clinical diagnosis of the type and severity of cerebral palsy was available for all subjects excepting two. For these latter, the researcher who is a registered occupational therapist assigned the subjects to diagnostic categories.

A copy of the questionnaire can be found in Appendix A and a summary of the information obtained can be found in Appendix B. The questionnaire required an average of 6 minutes to complete for the non-disabled and 8 minutes for the disabled.

C. Procedures

The cerebral palsied sample was selected first. Consent was obtained from one of the more severely disabled subjects and a pilot study was done to determine the applicability of

the instruments with particular attention being focused on limitations of responses due to physical ability.

As a result of the pilot study which revealed the need for physical assistance in making responses and the inordinately long time involved (3 hours), modifications were made. It was decided to see all subjects on an individual or small group basis (a maximum of four). It was also noted that the standard response sheet for the TSCS was difficult to use. Thus all subjects used an experimenter-modified sheet with the answer blanks appearing in the same order as the questions (see Appendix A). The original answer sheet involved answering on every other line and the blanks were not in the same order as the questions.

Following the pilot study, consent was obtained from all the selected adolescents and their parents. The written consent outlined the purpose of the study, time involved, and ethical issues such as confidentiality and the freedom to withdraw at any time. No mention was made of cerebral-palsy as some subjects did not believe that they fell in that category. See Appendix A for a copy of the consent form which was approved by all schools and their respective school boards.

After consent was obtained the instruments were administered to most of the subjects in the school setting. Two disabled subjects were seen at the university due to scheduling problems. All students were seen for one session only. A cerebral-palsied subject and his/her non-disabled

counterpart were usually given the questionnaires at the same time except in four cases (2 male and 2 female cases) where illness or scheduling problems precluded this. These latter cases were seen within an average of 9 days of each other (ranging from 5 hours apart to 28 days).

Half of the subjects per group were given the TSCS first followed by the FACES II. Then the CSI was administered followed by the demographic questionnaire. For the other half of the subjects in each group the order of the TSCS and the CSI was reversed with the order of the other two instruments remaining constant. The non-disabled subjects required an average of 34 minutes to complete all the questionnaires and the disabled required 44 minutes.

The TSCS and CSI were administered using the standard procedures for each scale. FACES II was administered using the standard procedures except that Part II of the scale was not used. The demographic questionnaire was introduced by the researcher reading aloud the instructions at the beginning of the form. All subjects worked at their own pace using the standard pencil and paper format except for 3 of the severely disabled subjects. In these cases the subject was given a question booklet and indicated a response verbally or by pointing. An aide or researcher recorded the answer. Confidentiality was maintained as the recorder did not know which specific question was being answered.

Debriefing occurred after completion of the questionnaires and consisted of thanking the students for

their participation, assuring them of the confidentiality of their responses, and answering any questions they had about the study. All questionnaires were coded to maintain confidentiality. Individual test results were not made known to the subjects although group results were made available upon request.

D. Data Analysis

The primary questions were tested using the multivariate analysis of variance (MANOVA) program of the Statistical Package for Social Sciences(SPSS) (Hull & Nie, 1981). This program uses the Pillai test to estimate the magnitude of effects and also outputs roots, canonical correlations, and eigenvalues. In addition, the univariate F ratios for each of the main effects and interaction effect are automatically calculated and it is possible to include contrasts for tests of effects (Hull & Nie, 1981). The between subjects variables were groups (disabled, non-disabled) and sex (male, female). The eight dependent variables were: (a) Pscore or overall self-esteem, (b) conflict, (c) self-criticism, (d) social self-esteem, (e) physical self-esteem, (f) family self-esteem, (g) personal self-esteem, and (h) total cohesion scores from FACES II. Variables (a) to (g) were measured by the TSCS.

The parametric test was chosen over a non-parametric technique primarily because the evidence points to the superiority of parametrics over non-parametrics (Boneau,

1961; Labovitz, 1967, 1970). Parametric tests are more powerful, yield more information (e.g., parameter estimates and reliability measures), allow for multiple comparisons, and test for interactions (Gaito, 1959). However, many argue that parametric techniques should not be used with data generated by ordinal scales such as those used in this study. Such a position is based upon the assumption that the analysis of variance must be restricted to use with data from interval or ratio scales.

Several authors have addressed the fallacy of this position over the years (Boneau, 1961; Gaito, 1959, 1960, 1980; Johnson, & DenHeyer, 1980). The main point made by these authors is that the meaning of the numbers is not important when one is choosing a statistical technique. Numbers are numbers and behave as such irrespective of whether they originated from an ordinal, interval, or ratio scale. As long as the numbers meet the basic mathematical requirements of a statistical technique, they can be used irrespective of their origin. The only times the meanings of the numbers are important are when one is examining the reliability and validity of a scale and when one is making inferential conclusions based on the data generated.

Labovitz (1967) has stated that as long as there is a rationale for assigning numbers to rank ordered items, a number of response categories, and consistent assignment to the categories, the probability of error in testing the data using parametric statistics is really very small. Both the

TSCS and FACES II provide five response categories which are consistently assigned and are rank ordered. The fact that the sampling error can be known through the use of more powerful parametric statistics allows clearer interpretation of the results. Labovitz (1970) does stress the need for caution in interpreting the results but the robustness of the parametric statistics does allow interential interpretation of the results.

Gaito (1959), Labovitz (1967), and Harris (1975) have demonstrated that analysis of variance is highly robust and remains relatively unaffected by deviations in variance and non-normal distributions. Under drastic violations of these assumptions all that occurred was a doubling of the probability level. Indeed, the only time the test was sensitive to non-homogeneous variance was when the test was used with groups of greatly different sizes. The evidence, as interpreted by Harrris (1975), suggests that multivariate techniques are also highly robust. Since the groups in this study were of equal size it appeared that using the MANOVA test was appropriate mathematically and was robust to violation of any assumptions.

MANOVA was chosen over multiple 2X2 ANOVA tests because of the problem of rising probability levels in the use of multiple tests on the same sample. The probability level of the ANOVA is based on the assumption that each ANOVA is done on an independent sample. In this study, this was not the case and thus the probability level with the multiple tests

would rise exponentially as the number of tests increased (Harris, 1975). Therefore, the MANOVA was used for it recognizes the fact that the dependent variables are from the same sample and tests them simultaneously which holds the overall probability level constant. In this study, the probability levels were set at 0.05 unless otherwise stated.

An univariate or one way ANOVA was used to test question 10. With the data collapsed over disability and sex, this analysis determined if the Pscores were significantly different between the three groups (balanced, enmeshed, and disengaged) identified by the cohesion scale of FACES II. As this analysis was based on unequal groups (balanced=21, enmeshed=15, disengaged=8) it was necessary to test for homogeneity of variance before setting the probability level. A test of the homogeneity of variance for the three groups did not yield significant differences (Cochran's C= 0.483, p=0.231). Therefore, the probability level was set at 0.05.

The last technique involved combining all subjects. Pearson correlation coefficients were obtained to determine if scores on the TSCS and CSI were significantly correlated. Coefficients were calculated for the total scores as well as for the subscales on each measure. For instance, the family subscale of the TSCS was compared with all of the CSI scores. This yielded a total of 42 correlations which were tested at a more stringent probability level to help control the overall level. The probability level was set at 0.015.

V. Results

The 2X2 MANOVA with 8 and 33 degrees of freedom revealed a significant main effect for sex (F=2.621, p=.024), a nonsignificant main effect for disability (F=1.959, p=.084), and a significant sex by disability interaction (F=2.528, p=0.029). The univariate analysis of variance tests associated with each variable are reported in Appendix L-2. Four simple effects contrasts with 5 and 36 degrees of freedom were done and revealed that on a test of five dependent variables (Pscore, physical, personal, social, and family self-esteem) the disabled girls scored significantly lower than non-disabled girls(F=5.603, p=.001) and disabled boys (F=4.171, p=.004). Disabled boys did not differ significantly from non-disabled boys (F=1.045, p=.407). Non-disabled girls did differ significantly from non-disabled boys (F=3.332, p=.014). Univariate F-tests are automatically calculated to determine the source of variation and these are reported in Appendix L-3.

These data yielded the following significant results in terms of the questions proposed in the statement of the problem. Question 2 asks if there is a significant difference between males and females on self-esteem as measured by the Pscore of the TSCS. Although the test on the Pscore showed no significant difference between males and females on this overall self-esteem measure (F=1.90, p=.176), the interaction term did approach significance (F=3.74, p=.06). There were significant differences on the

subscales of physical and personal self-esteem with the females having the lower scores (63.82, 63.95) when compared to the mean scores for the males (69.36, 69.4). For details see Appendix L-1 and L-2.

The main effects test for disability showed that there was no significant effect of disability on the 8 dependent variables. The interaction of disability and sex ($F=2.528$, $p=0.029$) did, however, show that there was an effect due to disability which varied according to sex. This interaction effect was most clearly seen on the physical ($F=4.45$, $p=.041$) and social ($F=10.36$, $p=.003$) subscale univariate tests (see Appendix L-2).

As such, there is a significant difference between the cerebral-palsied and the non-disabled on physical self-esteem (Question 3) when one looks at disability in the context of sex. In looking at the cell means given in Table 1, it is clear that this interaction stems from the fact that the mean score of the disabled females is approximately 10 below the mean scores of the other groups. Examination of the simple effects matrix revealed that the female disabled were significantly lower than the non-disabled females ($F=9.61$, $p=.004$) and the male disabled group ($F=10.73$, $p=.002$). The male non-disabled group were also significantly different from the disabled females ($F=11.64$, $p=.001$) as tested using a univariate F-test. In answering question 4, there does appear to be a difference between the cerebral-palsied and the non-disabled on social self-esteem

TABLE 1

Cell Means and Standard Deviations
for 2X2 MANOVA

Dependent Variable	MALES Dis.	MALES Non-dis.	FEMALES Dis.	FEMALES Non-dis.
Pscore				
Mean	341.73	338.00	311.36	343.09
SD	26.51	20.91	38.62	32.64
Physical				
Mean	69.18	69.54	59.00	68.64
SD	6.01	6.95	8.14	7.86
Personal				
Mean	68.45	70.36	60.82	67.09
SD	5.54	5.12	6.43	7.39
Family				
Mean	68.27	68.91	66.64	67.64
SD	9.44	5.61	9.31	11.02
Social				
Mean	67.82	65.18	61.27	71.00
SD	5.38	4.40	8.74	6.13
Self-crit.				
Mean	34.18	36.27	34.73	34.09
SD	5.96	3.29	4.86	6.36
Conflict				
Mean	32.82	31.91	36.00	28.36
SD	10.25	9.91	10.50	10.67
Cohesion				
Mean	60.09	56.91	58.91	59.45
SD	9.82	8.56	12.89	10.22

but again this effect is dependent upon sex. As mentioned earlier, there was a significant sex by disability interaction effect on the social subscale (p=.003) though the source of this effect was not immediately apparent from an examination of the cell means in Table 1. Once again the female disabled had the lowest mean but the other three means were scattered with the female non-disabled having the highest mean score. The simple effects contrast matrix showed that the disabled girls were significantly lower than non-disabled girls (F=12.82, p=.001) and disabled boys (F=5.81, p=0.021) but did not differ from non-disabled boys (F=2.07, p=.16). The non-disabled boys scored significantly lower than the non-disabled girls (F=4.59, p=.038). Indeed this is the only subscale on which these two groups differed.

Questions 1 and 5 through 9 are not addressed here since the 2X2 MANOVA revealed that the variables examined by these questions (e.g., conflict, defensiveness, family self-esteem and cohesion) did not make a significant contribution to the analysis. For details see Appendix L-2.

The univariate ANOVA based on the three cohesion groups identified by FACES II answers the issue raised in Question 10. The three groups were balanced (N=21), enmeshed (N=15), and disengaged (N=8), and the Pscore was the dependent variable. These groups had homogeneous variances (Cochran's C=0.483, p=.231) and were significantly different from one another (F= 3.726, p=.03). A priori orthogonal contrasts

collapsed across sex and disability revealed that the only significant differences were between those classified as enmeshed and those classified as disengaged ($F=15.15$, $p=.000$) and between those classified as balanced as opposed to disengaged ($F=6.54$, $p=.014$). The balanced and enmeshed groups were not significantly different ($F=3.604$, $p=.065$). The enmeshed group had the highest mean Pscore followed by the balanced group and then the disengaged group (see Appendix C-4).

In order to answer question 11 which asks if the TSCS and the child's version of the CSI are significantly correlated, Pearson product moment correlations were done. The results, shown in Table 2, reveal that the two measures are correlated with 26 of the 42 correlation coefficients being significantly greater than 0 and with correlation coefficients ranging from 0.78 (overall Pscore with CSI total) to 0.33 (physical self-esteem with CSI Academic).

Of the subscales that one would expect to be highly correlated, Table 2 shows that the two family subscales were highly correlated (0.74) and the social subscales had lower though still significant correlations (0.45). The lie scale of the CSI and the self-criticism scale of the TSCS were not significantly correlated despite the fact that they purportedly measure the same trait. The TSCS personal and physical subscales appeared to measure the same items as the CSI General scale with correlations of 0.73 and 0.74 respectively.

TABLE 2

Significant Correlation Coefficients
for TSCS and CSI subtests($p<.015$)

	CSI SCORES					
	Total	General	Social	Acad.	Parent	Lie
TSCS						
Pscore	.78	.72	.37	.46	.65	-.34
Phys.	.73	.73	.43	.33	.56	-.34
Pers.	.72	.74	.47	—	.54	-.39
Fam.	.62	.51	—	.36	.74	—
Soc.	.66	.54	.45	.43	.43	—
S.C.	—	—	—	—	—	—
Con.	—	—	—	—	—	—

Phys.=Physical self-esteem
Pers.=Personal self-esteem
Fam. =Family self-esteem
Soc. =Social self-esteem
S.C.=Self-criticism
Con.=Conflict
Acad.=Academic

In addition to the analyses related to the questions addressed in the statement of the problem, another analysis examined the relationship of IQ and overall self-esteem and was necessary because of the inclusion of subjects with an IQ score between 80 and 90. A regression analysis available from SPSS was done and showed that there was no significant relationship between IQ and Pscore ($p=.8065$). A basically flat line provided the best fit for the data. An additional check was made to determine if there was a significant difference on overall self-esteem when IQ scores were grouped into four levels (IQ 79-90, 91-100, 101-110, 111-124). Again, no significant difference was found between the IQ groups on overall self-esteem (see Appendix E).

VI. Discussion

Perhaps the most interesting finding of this study was the differential effect of cerebral palsy on the self-esteem of males and females. Cerebral-palsied girls scored lower than the three other groups on all self-esteem measures and scored significantly lower when compared with: a) the three other groups on physical self-esteem, b) the non-disabled girls and disabled boys on social self-esteem, and c) the two non-disabled groups on personal self-esteem. The cerebral-palsied girls did not follow the expected pattern of sex differences though the non-disabled girls did score as expected. While the disabled girls were lower than the boys on physical self-esteem (Osborne & LeGette, 1982) they were not higher than the boys on social self-esteem which was the expected pattern (Dusek & Flaherty, 1981; Osborne & LeGette, 1982).

What is it about the self-concept of a female which makes her particularly sensitive to the negative effects of a disability and what it is about the male's self-concept which leaves him relatively unaffected? Girls, when compared to boys, place more emphasis on social interaction and interpersonal relationships (Burns, 1979; Dusek and Flaherty, 1981; Lerner et al., 1976) and are more aware of what others think of them (O'Donnell, 1979). According to the interactionism theory, this difference in awareness and emphasis is probably not inherent to a girl but is learned through interaction with significant others. These learned

differences might account for the differential effect of cerebral palsy on girls and boys. For instance, if girls are more aware of how others view them and are more concerned with interpersonal relationships then the negative societal view of cerebral palsy would be expected to lower a girl's self-esteem more than a boy's self-esteem.

In addition, several authors (e.g., Lerner et al., 1976; Pomerantz, 1979) have suggested that for girls, but not for boys, attractiveness is very closely linked with the self-concept. Rousso (1981) has stated that cerebral-palsied girls question their attractiveness and beauty. If one defines beauty as grace, excellence, or qualities which give pleasure to others, and attractiveness as the ability to excite interest or emotion (Webster's Dictionary, 1981), one can see why cerebral-palsied girls might not feel particularly attractive or beautiful. Because of the tie between attractiveness and and self-concept for girls, but not for boys, one can see another possible explanation for why disabled girls scored lower than disabled boys.

To determine if there was a difference between the disabled girls and other groups in attractiveness and interpersonal areas, items which directly addressed these areas were selected from the physical and social self-esteem subscales of the TSCS. A descriptive analysis of some of these items is presented in Table 3 showing the disabled girls scoring lower on these items. Other items from the physical and social subscales are summarized in Table 4 to

show that the differences were limited to the items related to attractiveness and interpersonal relationships (see Appendix J also). Statistical analyses were not done because the numbers in each response category were small.

From an interactionist's framework, one must now explain why disabled girls place more emphasis on attractiveness and interpersonal relationships instead of emphasizing areas in which they feel more positively. A tentative answer comes from Rosenberg (1979) who stated that negative self-esteem can result when certain traits cannot be treated as unimportant because they are needed in order to attain goals one has learned to value. Marriage or a long-lasting intimate relationship with the opposite sex is a goal valued by most people in our culture. For many females the means for attaining this goal appear to depend on attractiveness and interpersonal skills whereas for males, marriage does not appear to be as dependent on these attributes. Thus the girl with marriage as a goal cannot de-emphasize these areas even if they lower her self-esteem. As such, through learned interaction and because of social importance, girls place more emphasis on attractiveness and interpersonal success. This in turn lowers the cerebral-palsied girl's physical, social, and personal self-esteem scores.

Before accepting this as a possible explanation of the findings, it is appropriate to rule out alternative explanations. One can rule out IQ and age differences since

TABLE 3

Items from Physical and Social Self-Esteem Subscales(TSCS) Related to Attractiveness and/or Interpersonal Relationships

		Compl. False 1	2	3	4	Compl. True 5
Physical Items						
I am an attractive person.	DG	2	1	4	4	
	NDG			4	7	
	DB			6	5	
	NDB			4	4	3
Social Items						
From a social standpoint I'm no good at all.	DG	2	3	5	1	
	NDG	4	6	1		
	DB	6	4	1		
	NDB	4	5	1	1	
I do not feel at ease with other people.	DG		4	4	2	1
	NDG	2	6	3		
	DB	2	5	4		
	NDB	1	4	6		
I am popular with men. with women.	DG		4	4	2	1
	NDG			2	9	
	DB			3	7	1
	NDB			9	2	
I get along well with other people.	DG			6	3	2
	NDG				8	3
	DB			3	5	3
	NDB			1	8	2
I am as sociable as I want to be.	DG	1	4	4	1	1
	NDG			1	8	2
	DB		1	5	4	1
	NDB		3	2	5	1
I am hard to be friendly with.	DG	3	3	3	2	
	NDG	5	6			
	DB	7	2	1	1	
	NDB	3	8			

DG=disabled girls NDG=non-disabled girls
DB=disabled boys NDB=non-disabled boys

TABLE 4

Items from Physical and Social Self-Esteem Subscales(TSCS) Unrelated to Interpersonal Relationships

		Compl. False 1	2	3	4	Compl. True 5
Physical Items						
I try to be careful about my appearance.	DG	1	1	1	4	4
	NDG			1	6	4
	DB		1	3	5	2
	NDB			3	5	3
I like to look nice and neat all the time.	DG		1	1	3	6
	NDG			1	2	8
	DB			2	6	3
	NDB		1	3	3	4
I would like to change some parts of my body.	DG	1	2	1	3	4
	NDG	1	1	3	2	4
	DB	3	3	2	2	1
	NDB	1	4	1	4	1
Social Items						
I should be polite to others.	DG	1	1	4	4	1
	NDG	2	4	1	4	
	DB		6	1	2	2
	NDB	1	2	4	3	1
I try to understand the other person's pt. of view.	DG		1	2	7	1
	NDG			2	7	2
	DB			5	4	2
	NDB		1	3	6	1
I see good points in all the people I meet.	DG			6	3	2
	NDG			3	6	2
	DB			4	5	2
	NDB		1	4	4	2

DG=disabled girls NDG=non-disabled girls
DB=disabled boys NDB=non-disabled boys

the groups were equated on these variables and were within 1 IQ point of each other and within .2 years. While the subjects were not matched by SES, the groups did prove to be basically equivalent for SES and parental level of education (Appendix F). Religious affiliation and amount of church attendance were fairly equivalent for the groups (Appendix H). The degree of disability could not be used to explain the difference between the disabled males and females as exactly the same number of males and females fell into each of the three categories (mild, moderate, and severe). Detailed descriptive statistics on these five variables can be found in Appendix B.

Because the disabled groups did not differ from the non-disabled groups or from each other on the defensiveness scale, one cannot say that the disabled boys' scores were artificially inflated due to their lack of self-criticism and explain the results in this way. Rather, the lack of difference on conflict scores may be interpreted as demonstrating that the dual status of abnormality and adolescence does not produce more conflicting perceptions as to who one is than does the single status of adolescence.

The one variable which may account for some of the differences between groups is parental situation. The groups were not identical when one considered parental situation. It was difficult to obtain accurate information on this area as it was not always recorded on the student record and one school board (N=20) refused to allow inclusion of a question

on the parental situation in the demographic questionnaire. Thus the information was often obtained indirectly through the student's response to a question about the occupation of both parents. Based on this method of data collection, 35 students were living in intact or natural parental situations including one child in the same foster home for most of his life. The other 7 students were living with one natural parent in either a single parent home or in a common-law situation. As all the non-disabled girls were from intact homes while three of the disabled girls were living with only one natural parent, one might see parental situation as a possible explanation for the reported differences. However, parental situation would not necessarily explain the difference between the disabled girls and the two boys groups since both male groups included two boys living with only one natural parent.

It was decided to do an unequal n, one way ANOVA to examine parental situation (Appendix I). No significant difference between the intact family group (N=37) and the single natural parent group (N=7) on overall Pscore was found ($F=2.758$, $p=.104$). Despite the unequal group size, the groups had homogeneous variance ($C=0.692$, $p=.07$). Thus, this variable too can be ruled out as a possible explanation for the differences between groups. It would appear that the best explanation for the differential effect of disability would be the one offered earlier; namely that girls place more emphasis on attractiveness and interpersonal

relationships and that these areas are influenced in a negative manner when one has a physical disability. Furthermore, girls learn to place emphasis on these areas through interaction with others.

Other interesting results were found in the analysis of the FACES II scores. Comparing the cohesion scores of the disabled and non-disabled groups to the scale's norms indicates that fewer of this study's families fell into the balanced category than expected and more fell into the enmeshed category (see Table 5). Optimal family functioning is usually associated with balanced scores (Olson & McCubbin, 1982), though the enmeshed family can work if all family members are satisfied (Olson et al., 1982). While the perceptions of the entire family were not measured in this study, a cohesion score placing a family in the enmeshed category was associated with the highest mean self-esteem score for the adolescent. On the other hand, disengaged families were associated with the lowest mean overall self-esteem score. These findings suggest that the enmeshed family allowed optimal functioning for the adolescent.

An enmeshed family is described as one in which there is a high level of emotional bonding and involves shared interests, time spent together, shared decision making, and an awareness of each other's friends outside the family. Family members do not go their own way nor do they form coalitions within the family (Olson et al., 1982). It is not difficult to see that such a family would be more conducive

TABLE 5

Percentage of Subjects in Each Cohesion Group Compared to Norms

	Balanced	Enmeshed	Disengaged
Disabled	50%	36%	14%
Non-disabled	45%	32%	23%
Combined	48%	34%	18%
Norms	62.2%	20.2%	17.6%

to positive self-esteem than would be a disengaged family which has almost the opposite characteristics to those listed above. In fact, according to the literature (e.g., Bachman, 1970; Burns, 1979; Gecas, 1971) many of the qualities associated with positive self-esteem are also the qualities associated with an enmeshed family.

From an interactionist's perspective, one could assume that the enmeshed family provides consistent, positive interactions with significant others which facilitates the reported high levels of emotional bonding. Shared decision making would also facilitate a positive self-perception as the individual would feel that his input was of value to family decision making. The disengaged family members would not receive these positive perceptions due to the fact that other family members do not seek to spend time with him/her and individual input was not sought in decision making. In

short, their interactions with significant others would not foster a sense of self worth.

Another interesting and unexpected finding was that seven of the cerebral-palsied subjects responded to questions from the Demographic Questionnaire by stating that they did not have cerebral palsy. All of them (5 males and 2 females) were mildly disabled and showed some visible sign of cerebral palsy. Due to ethical restrictions, the individuals were not asked why he/she had difficulty moving an arm or a leg. One explanation may be that they did not label themselves as cerebral-palsied but used some other label. Alternatively, they may never have been treated as disabled by significant others and hence did not incorporate the label into their self-concept. If they were not labelled as cerebral-palsied, this may have protected their self-esteem from the negative societal view. However, on overall self-esteem the seven did not differ from the other fifteen (Appendix G). Their mean score was not significantly different from those who acknowledged having cerebral palsy ($F=0.279$, $p=.603$). Thus, while they avoided the label, their physical disability may have resulted in less positive self-perceptions as they experienced difficulties which were clearly not normal but weren't labelled as cerebral-palsied.

The two self-concept measures used in this study, the TSCS and the child's version of the CSI, do appear to be correlated. The purpose in doing the correlations was to determine if these two measures could be used in a

longitudinal study of self-esteem and based on the results of this study, it appears to be reasonable to use certain subscales for a longitudinal study. The subscales are those with the highest intercorrelations. As such, longitudinal studies could focus on the family subscales, the total scores, the CSI General subscale, and the TSCS personal and physical subscales. With these measures one could then study self-esteem and self-concept for a period spanning from early school years to adulthood.

A. Implications and Conclusions

The purpose of the paper was to examine the self-concept, self-esteem, and family relations of adolescents physically disabled by cerebral palsy using non-disabled adolescents for comparison. A secondary interest was studying the relationship of two measures of self-concept. Twenty-two cerebral-palsied adolescents and twenty-two non-disabled adolescents each completed four questionnaires and the results were analyzed using a 2X2 MANOVA. While the study design limits the generalizability of the findings, certain trends appeared.

The adolescents in this study had higher overall self-esteem if they classified their families as enmeshed or balanced. Those in disengaged families had significantly lower self-esteem.

Contrary to public opinion and some of the literature, cerebral-palsied adolescents did not score lower than non-disabled adolescents on overall self-esteem measures and their self-concepts were not more variable. They were similar to the non-disabled in terms of defensiveness. It was only on the specific subscales of physical, social, or personal self-esteem that differences appeared. These differences were largely attributable to the disabled girls as the cerebral-palsied boys were quite similar to the non-disabled. The cerebral-palsied girls did not follow the expected pattern of sex differences on the subscales. The differential effect of disability on males and females can

be explained in terms of learned values, such as what constitutes attractiveness, and interaction with significant others using the theory of interactionism.

Such results have definite implications for those who have contact with cerebral-palsied girls in either a treatment, school, or home situation. Particular attention needs to be paid to the girls, especially with respect to their feelings about themselves in physical, social, and personal areas. Their definitions of attractiveness and beauty need to be evaluated and redefined. They should be taught interpersonal skills which will allow them to feel more confident in social situations and which will enable them to achieve their goals.

In addition to direct implications, this study has generated many questions. A longitudinal study is needed to answer the question of when and how cerebral-palsied girls come to feel less positive about themselves than do boys. Some of the groundwork has been laid through the present investigation of the relationship between two different measures of self-concept. We now have measures which can be used with a known degree of reliability. Another useful longitudinal study would be one which follows the adolescents from the various family types to determine if the differences in self-esteem persist.

It would also be helpful to talk with those adolescents who have been identified as having high or low self-esteem to determine what factors they felt had the greatest

influence on their self-view. With those having low self-esteem some form of intervention program should also be studied. Using the theory of interactionism, this intervention might take the form of exploration of the individual's standards and values, facilitation of positive interactions with significant others, and encouragement of cohesion in the family.

References

Abramson, M., Ash, M.J., & Nash W.R. Handicapped adolescents- a time for reflection. Adolescence, 1979, 14(55), 557-565.

Anderson, E. The psychological and social adjustment of adolescents with cerebral palsy or spina bifida and hydrocephalus. International Journal of Rehabilitation Research, 1979, 2(2), 245-247.

Bachman, J.G. Youth in transition(Vol.2): The impact of family background and intelligence on tenth grade boys. Ann Arbor, Michigan: University of Michigan, 1970.

Bachman, J.G., & O'Malley, P.M. Self-esteem in young men: A longitudinal analysis of the impact of educational and occupational attainment. Journal of Personality and Social Psychology, 1977, 35, 365-380.

Battle, J. Culture-free self-esteem inventory: Self-esteem inventories for children and adults. Seattle: Special Child Publications, 1981.

Battle, J., Blowers, T., & Yeudall, L. An exploratory study of self-esteem and brain dysfunction in elementary school children. Psychological Reports, 1980, 46(1), 149-150.

Bax, M. Medical aspects of the care of handicapped adolescents. Developmental Medicine and Child Neurology, 1967, 9, 776-779

Beane, J.A., & Lipka, R.D. Self-concept and self-esteem: A construct differentiation. Child Study Journal, 1980, 10(1), 1-6.

Bishop, E.S. Self-concept, social adjustment, and family relations: A comparison of physically handicapped adolescents in day and residential special schools in Great Britain (Doctoral dissertation, Ohio State University, 1977). Dissertation Abstracts International, 1977, 37(11-B), 5824. (University Microfilms No. 77-10, 493)

Bledsoe, J.C., & Wiggins, R.G. Congruence of adolescents' self-concepts and parents' perceptions of adolescents' self-concepts. The Journal of Psychology, 1973, 83, 131-136.

Blishen,B., & Carroll,W. Sex differences in a socioeconomic

index for occupations in Canada. Canadian Review of Sociology and Anthropology, 1978, 15(3), 352-371.

Blishen, B., & McRoberts, H.A. A revised socioeconomic index for occupations in Canada. Canadian Review of Sociology and Anthropology, 1976, 13, 71-79.

Bolton,B. The Tennessee Self-Concept Scale and the Normal Personality Sphere(16 PF). Journal of Personality Assessment, 1979, 43(6), 608-613.

Boneau, C.A. A note on measurement scales and statistical tests. American Psychologist, 1961, 16, 260-261.

Boyle, E.S., & Larson, P.C. Factor structure of the Tennessee Self-Concept Scale for an institutionalized disabled population. Perceptual and Motor Skills, 1981, 52, 575-582.

Brier, N.M., & Demb, H.B. Adolescence in the developmentally disabled. Psychiatric Annals, 1981, 11(3), 57-65.

Bryan, D.P., & Herjanic, B. Depression and suicide among adolescents and young adults with selective handicapping conditions. Exceptional Education Quarterly, 1980, 1(2), 57-65.

Burns, R.B. The self-concept: Theory, management, development, and behavior. London: Longman Group, 1979.

Bynner, J.M., O'Malley, P.M., & Bachman, J.G. Self-esteem and delinquency revisited. Journal of Youth and Adolescence, 1981, 10(6), 407-441.

Connor, F.P., & Rusalem,H. Psychological considerations with crippled children. In W. Cruickshank (Ed.), Psychology of exceptional children and youth (3rd ed.). Englewood Cliffs, N.J.: Prentice-Hall, 1971.

Coopersmith, S. The antecedents of self-esteem. San Francisco: Freeman and Co., 1967.

Cruickshank, W.M.(Ed.) Cerebral palsy: A developmental disability (3rd ed.). Syracuse, N.Y.: Syracuse University Press, 1976.

Deppe, P.R., Sherman, J.L., & Engel, S. The high-risk child. New York: MacMillan Pub. Co., 1981.

Dorner, S. Adolescents with spina bifida: How they see their situation. Archives of Disease in Childhood, 1976, 51, 439-444.

Dusek, J.B., & Flaherty, J.F. The development of the

self-concept during the adolescent years. Monograph of the Society for Research in Child Development. 1981, 46(4).

Ellis, D.W., Gehman, W.S., & Katzenmeyer, W.G. The boundary organization of self-concept across the 13 and 18 year age span. Educational and Psychological Measurement, 1980, 40(1), 9-17.

Erikson, E.H. Life history and the historical moment. New York: Norton & Co., 1975.

Filsinger,E.E., & Anderson,C.C. Social class and self-esteem in late adolescence: Dissonant context or self-efficacy. Developmental Psychology, 1982, 18(3), 380-384.

Fitts, W.H. Manual for Tennessee Self-Concept Scale. Nashville: Counselor Recordings and Tests, 1965.

Fitts, W.H. The self-concept and performance. Dede Wallace Centre Monograph (No. 5). Nashville, Tenn.: 1972.

Fitts, W.H. The self-concept and behavior: Overview and supplement. Dede Wallace Centre Monograph (No. 7). Nashville, Tenn,: 1972b.

Flatley, J.M. The relationship of selected characteristics of physical disability on the self-concepts of the physically disabled. (Doctoral dissertation, Pennsylvania State University, 1972). Dissertation Abstracts International, 1973, 33(10-A), 5582. (University Microfilms No. 73-7434)

Flora, R.R. The effect of self-concept upon adolescents' communication with parents. Journal of School Health, 1978, 48(2) 100-102.

Freeman, R.D. Psychiatric problems in adolescents with cerebral palsy. Developmental Medicine and Child Neurology, 1970, 12, 64-70.

Gaito, J. Non-parametric methods in psychologic research. Psychological Reports, 1959, 5, 115-125.

Gaito, J. Scale classification and statistics. Psychological Review, 1960, 67(4), 277-278.

Gaito, J. Measurement scales and statisitcs: Resurgence of an old misconception. Psychological Bulletin, 1980, 87(3), 564-567.

Gecas, V. Parental behavior and dimensions of adolescent self-evaluation. Sociometry, 1971, 34(4), 466-482.

Gecas, V., Thomas, D.L., & Weigert, A. Perceived parent-child interaction and boys' self-esteem in two cultural contexts. International Journal of Comparative Sociology, 1970, 11, 317-324.

Hagberg,B., Hagberg, G., & Olow, I. The changing panorama of cerebral palsy in Sweden, 1954-1970: I.Analysis of general changes II. Analysis of various syndromes. Acta Paediatrica Scandinavia, 1975, 64, 187-200.

Hanes, B., Prawat, R.S., & Grissom, S. Sex role perceptions during adolescence. Journal of Educational Psychology, 1979, 71(6), 850-855.

Harper, D.C. Perceived maternal child-rearing behavior among disabled and non-disabled adolescents. Perceptual and Motor Skills, 1977, 44(3 Pt.2), 1095-1105.

Harris, R.J. A primer of multivariate statistics. New York: Academic Press, 1975.

Havighurst, R.J. Developmental tasks and education (3rd ed.). New York: David McKay Co., 1976.

Heisler, V. A handicapped child in the family: A guide for parents, New York: Grune & Stratton, 1972.

Heiss, J. The social psychology of interaction. Englewood Cliffs, N.J.: Prentice-Hall, 1981.

Henein, R.A. Self-concept as a predictor of academic achievement and educational attainment. (Doctoral dissertation, University of Michigan, 1978). Dissertation Abstracts International, 1978, 39(6-A), 3471.

Hewett, S., Newsom, J., & Newsom, E. The family and the handicapped child: A study of cerebral-palsied children in their homes. Chicago: Aldine Pub. Co., 1970.

Horn, J. Reactions to the handicapped- Sweaty palms and saccharine words. Psychology Today, 1975, 9(6), 122-124.

Howard, J. The influence of children's developmental dysfunctions on marital quality and family interaction. In R. Lerner & G. Spanier (Eds.), Child influences on marital and family interaction: A life-span perspective. New York: Academic Press, 1978.

Hull, C.H., & Nie, N.H. (Eds.). SPSS update 7-9: New procedures and facilities for releases 7-9. New York: McGraw-Hill, 1981.

Jaquish, G.A., & Savin-Williams, R.C. Biological and

ecological factors in the expression of adolescent self-esteem. Journal of Youth and Adolescence, 1981, 10(6), 473-485.

Johnson,R.W., & DenHeyer,K. On the enduring untruth about measurement and parametric statistics. Canadian Psychology, 1980, 21, 134-135.

Kellerman, J., Zeltzer, L., Ellenberg, L., Dash, J., & Rigler, D. Psychologic effects of illness in adolescence. I. Anxiety, self-esteem, and perception of control. Journal of Pediatrics, 1980, 97(1), 126-131.

Kernaleguen, A., & Conrad, G. Analysis of five measures of self-concept. Perceptual and Motor Skills, 1980, 51, 855-861.

Kimball,A.J., & Campbell,M.M. Psychologic aspects of adolescent patient health care. Clinical Pediatrics, 1979, 18(1), 15-25.

Kirk, S.A. Educating exceptional children. Boston: Houghton Mifflin Co., 1972.

Knott, G. Attitudes and needs of parents of cerebral-palsied children. Rehabilitation Literature, 1979, 40(7), 190-195.

Labovitz, S. Some observations on measurement and statistics. Social Forces, 1967, 46(2), 151-160.

Labovitz, S. The assignment of numbers to rank order categories. American Sociological Review, 1970, 35(3), 515-524.

Lademann, A. Postneonatally acquired cerebral palsy: A study of aetiology, clinical findings, and prognosis in 170 cases. Acta Neurologica Scandinavica, 1978, 57(Suppl. 65), 1-148.

Lambright, C.G. A comparative analysis of self-concept of physically disabled adolescents in two types of school organization. (Doctoral dissertation). Dissertation Abstracts International, 1967, 23(3-A), 966. (University Microfilms No.67-3782)

Lang, R.J., & Vernon, P.E. Dimensionality of the perceived self: The Tennessee Self Concept scale. British Journal of Social and Clinical Psychology, 1977, 16(4), 363-371.

Larned, D.T., & Muller, D. Development of self-concept in grades one through nine. Journal of Psychology, 1979, 102(1), 143-155.

Lawson, M. C. Development of body build stereotypes, peer ratings, and self-esteem in Australian children. Journal of Psychology, 1980, 104(1), 111-118.

Lerner, R.M., Orlos, J.B., & Knapp, J.R. Physical attractiveness, physical effectiveness, and self-concept in late adolescents. Adolescence, 1976, 11(43), 313-326.

Lerner,R.M., & Spanier,G.B. Adolescent development: A life-span perspective. New York: McGraw-Hill, 1980.

Linkowski, D.C., & Dunn, M.A. Self-concept and acceptance of disability. Rehabilitation Counseling Bulletin, 1974, 18(1), 28-32.

Lukens, K., & Panter, C. Thursday's child has far to go. Englewood Cliffs, N.J.: Prentice-Hall, 1969.

McCarthy,J.D., & Hage,D.R. Analysis of age effects in longitudinal studies of adolescent self-esteem. Developmental Psychology, 1982, 18(3), 372-379.

McCubbin, H., & Patterson, J. Family stress and adaptation to crises: A double ABCX model of family behavior. Paper presented at the meeting of the National Council on Family Relations, Milwaukee, Wisconsin, October 1981.

McDaniel, J.W. Physical disability and human behavior (2nd ed.). Don Mills, Ont.: Pergamon Press, 1976.

McFern, A.R. A self-concept study of adolescents in four areas of exceptionality (Doctoral dissertation). Dissertation Abstracts International, 1974, 34(7-A), 4040. (University Microfilms No. 73-31, 923)

McMichael, J.K. Handicap: A study of physically handicapped children and their families. London: Staples Press, 1971.

Meissner, A.L., & Thoreson, R.W. Relation of self-concept to impact and obviousness of disability among male and female adolescents. Perceptual and Motor Skills, 1967, 24(3 Pt. 2), 1099-1105.

Minde, K.K. Coping styles of 34 adolescents with cerebral palsy. American Journal of Psychiatry, 1978, 135(11), 1344-1349.

Minde, K.K., Hackett, J.D., Killou, D., & Silver, S. How they grew up: 41 physically handicapped children and their families. American Journal of Psychiatry, 1972, 128 (12), 1554-1560.

Molla, P.M. Self-concept in children with and without

physical disabilities. Journal of Psychiatric Nursing and Mental Health Services, 1981, 19(6), 22-27.

Moore, S.M., & Rosenthal, D.A. Sex-roles: Gender, generation, and self-esteem. Australian Psychologist, 1980, 15(3), 467-477.

Nielsen, H.H. A follow-up study of young cerebral-palsied adolescents. Scandanavian Journal of Psychology, 1975, 16(3), 217-224.

Nussbaum, J. An investigation of the relationship between self-concept, mother's concept, and the reality orientation of adolescents with cerebral palsy (Doctoral dissertation, New York University, 1961). Dissertation Abstracts, 1962, 22(12), 4410-4411.

O'Donnell, W.J. Adolescent self-reported and peer-reported self-esteem. Adolescence, 1979, 14(55), 465-470.

Olson,D.H., & McCubbin,H.I. One thousand families: A national survey of AAL families. (Preliminary report) University of Minnesota, June 1982.

Olson,D.H., Portner,J., & Bell,R. FACES II: Family adaptability and cohesion evaluation scales. In D.H. Olson, H.I. McCubbin, H. Barnes, A. Larson, M. Muxon, & M. Wilson (Eds.), Family inventories: Inventories used in a national survey of families across the family life cycle. St. Paul, Minn.: Family Social Science Dept., University of Minnesota, 1982.

Olson, D., Spenkle, D.H., & Russell, C.S. Circumplex model of marital and family systems: I. Cohesion and adaptibility dimensions, family types, and clinical applications. Family Process, 1979, 18(1), 3-27.

Osborne,W.L., & LeGette,H.R. Sex, race, grade level, and social class differences in self-concept. Measurement and Evaluation in Guidance, 1982, 14(4), 196-201.

Podneau-Czehofsky, I. Is it only the child's guilt? Some aspects of family life of cerebral-palsied children. Rehabilitation Literature, 1975, 36(10), 308-311.

Pomerantz, S.C. Sex differences in the relative importance of self-esteem, physical self-satisfaction, and identity in producing adolescent satisfaction. Journal of Youth and Adolescence, 1979, 8(1), 51-61.

Pringle, M.K. The needs of children (2nd ed.). London: Hutchinson, 1980.

Protinsky,H., & Farrier, S. Self-image changes in

pre-adolescents and adolescents. Adolescence, 1980, 15(60), 887-893.

Reynell, J. Children with physical handicaps. In V.P.Varma (Ed.), Stresses in children. New York: Crane, Russak, & Co., 1973.

Richardson, S.A. People with cerebral palsy talk about themselves. Developmental Medicine and Child Neurology, 1972, 14, 524-535.

Rogers, D. The psychology of adolescence. Englewood Cliffs, N.J.: Prentice-Hall, 1977.

Rosenberg, M. The dissonant context and the adolescent self-concept. In S.E. Dragastin & G.H.Elder (Eds.), Adolescence in the life cycle: Psychological change and social context. Washington, D.C.: Hemisphere Pub., 1975.

Rosenberg, M. Conceiving the self. New York: Basic Books, 1979.

Rousso, H. Disabled people are sexual too. Exceptional Parent, 1981, 11(6), 21-25.

Rousso, H. Taking on the social scene. Exceptional Parent, 1982, 12(1), 21-25.

Semmel, M.L., & Dickson, S. Connotative reactions of college students to disability labels. Exceptional Children, 1966, 32, 442-450.

Sethi, M., & Sen, A. A comparative study of orthopedically handicapped children with their normal peers on some psychological variables. Personality Study and Group Behavior, 1981, 1(2), 83-95.

Shakespeare, R. The psychology of handicap. London: Methuen, 1975.

Shears, L.M., & Jensomsa, C.J. Social acceptability of anamolous persons. Exceptional Children, 1969, 36, 91-96.

Simmons, R.G., Blyth, D.A., VanCleave, E.F., & Bush, D.M. Entry into early adolescence: The impact of school structure, puberty, and early dating on self-esteem. American Sociological Review, 1979, 44(6) 948-967.

Simmons, R.G., & Rosenberg, F. Sex sex-roles, and self-image. Journal of Youth and Adolescence, 1975, 4(3), 229-258.

Smith, I.D. Sex-differences in self-concept revisited.

Australian Psychologist, 1978, 13(2), 161-166.

Smith, M. D. Predictors of self-concept among learning disabled children. Journal of Learning Disabilities, 1979, 12(10), 664-669.

Smits, S.J. Reactions of self and others to the obviousness and severity of physical disability (Doctoral dissertation, University of Missouri, 1964). Dissertation Abstracts, 1964, 25(2), 1324-1325.

Starr, P., & Heiserman, K. Acceptance of disability by teenagers with oral-facial clefts. Rehabilitation Counseling Bulletin, 1977, 20(3), 198-201.

Thomas, D. The social psychology of childhood disability. London: Methuen & Co., 1978.

Thompson, W. Correlates of self-concept. Dede Wallace Centre Monograph (No. 6). Nashville, Teen.: 1972.

Travis, G. Chronic illness in children: Its impact on child and family. Stanford, Calif.: Stanford University Press, 1976.

Vacchiano, R.B., & Strauss, P.S. The construct validity of the Tennessee Self Concept Scale. Journal of Clinical Psychology, 1968, 24(3) 323-326.

VanPutte, A.W. Relationship of school setting to self-concept in physically disabled children. Journal of School Health, 1979, 49(10), 576-578.

Webster, E.(Ed.) Professional approaches with parents of handicapped children. Springfield, Ill.: Charles Thomas Co., 1976.

Webster's new collegiate dictionary. Toronto: Thomas Allen & Son, 1981.

Wells, L.E., & Marwell,G. Self-esteem: Its conceptualization and measurement. Beverly Hills, Calif.: Sage Pub., 1976.

Wilson, S.J. Women, the family, and the economy. Toronto: McGraw-Hill, 1982.

Wright, B.A. Physical disability- A psychological approach. New York: Harper & Row, 1960.

Wylie, R.C. The self-concept (Rev.ed., Vol.1). Lincoln, Nebraska: University of Nebraska Press, 1974.

Wylie, R.C. The self-concept (Rev.ed., Vol.2). Lincoln, Nebraska: University of Nebraska Press, 1979.

Young, R. Chronic sorrow: Parent's response to the birth of a child with a defect. American Journal of Maternal Child Nursing, 1977, 2(1), 38-42.

Youssef, F.A. Relationship between parents' perception of the self-concept of their physically habdicapped children and the children's self-concept (Doctoral dissertation, Catholic University of America, 1979). Dissertation Abstracts International, 1980,40(10-B), 4743. (University Microfilms No. 8008356)

APPENDIX A

Demographic Questionnaire
TSCS Answer Sheet
Consent Form

DEMOGRAPHIC QUESTIONNAIRE (E.P.S.B.)

This questionnaire will help us to understand the background of teenagers. Please answer each question as fully as you can. If you don't understand a question please ask for assistance. No one else will see your answers.

What is your father's occupation? _____

How much schooling has he had? _____ years

What degrees/certificates does he have? _____

What is your mother's occupation? _____

How much schooling has she had? _____ years

What certificates/degrees does she have? _____

What do you plan to do after you finish high school? _____

_____

What do you enjoy doing with your free time? _____

_____

Did you attend church in the last year? ___ Yes ___ No

If you answered yes, how often do you attend? _____
Which church do you attend? _____

How often have you been ill in the last month? _____ number of times

What illnesses did you have? _____

Do you take drugs regularly? ___ Yes ___ No

If yes, give the name of the medication/drug. _____

_____

How often do you take it? _____

What is cerebral palsy? _____

_____

Do you have cerebral palsy? ___ Yes ___ No

If you answered no, then you have completed the questionnaire. THANK YOU.

If you answered yes, please answer the following questions.

I have had cerebral palsy: __since birth __since I was less than 2 yrs. old

__since I was less than 6 yrs. old

__since I was older than 6 yrs.

I find that others are aware of the fact that I have a disability:

__never __once in a while __sometimes __most of the time __always

People have difficulty understanding me when I talk:

__never __once in a while __sometimes __most of the time __always

I use a communication aid. ___ No ___ Yes _____
specify type

Cerebral palsy stops me from doing the things I want to do:

__never __once in awhile __sometimes __most of the time __always

TSCS Answer Sheet

97. _1 _2 _3 _4 _5
8. _1 _2 _3 _4 _5
10. _1 _2 _3 _4 _5
12. _1 _2 _3 _4 _5
26. _1 _2 _3 _4 _5
28. _1 _2 _3 _4 _5
30. _1 _2 _3 _4 _5
44. _1 _2 _3 _4 _5
46. _1 _2 _3 _4 _5
48. _1 _2 _3 _4 _5
62. _1 _2 _3 _4 _5
64. _1 _2 _3 _4 _5
66. _1 _2 _3 _4 _5
80. _1 _2 _3 _4 _5
82. _1 _2 _3 _4 _5
84. _1 _2 _3 _4 _5
96. _1 _2 _3 _4 _5
98. _1 _2 _3 _4 _5
13. _1 _2 _3 _4 _5
15. _1 _2 _3 _4 _5
17. _1 _2 _3 _4 _5
31. _1 _2 _3 _4 _5
33. _1 _2 _3 _4 _5
35. _1 _2 _3 _4 _5
49. _1 _2 _3 _4 _5

51. _1 _2 _3 _4 _5
53. _1 _2 _3 _4 _5
67. _1 _2 _3 _4 _5
69. _1 _2 _3 _4 _5
71. _1 _2 _3 _4 _5
85. _1 _2 _3 _4 _5
87. _1 _2 _3 _4 _5
89. _1 _2 _3 _4 _5
99. _1 _2 _3 _4 _5
14. _1 _2 _3 _4 _5
16. _1 _2 _3 _4 _5
18. _1 _2 _3 _4 _5
32. _1 _2 _3 _4 _5
34. _1 _2 _3 _4 _5
36. _1 _2 _3 _4 _5
50. _1 _2 _3 _4 _5
52. _1 _2 _3 _4 _5
54. _1 _2 _3 _4 _5
68. _1 _2 _3 _4 _5
70. _1 _2 _3 _4 _5
72. _1 _2 _3 _4 _5
86. _1 _2 _3 _4 _5
88. _1 _2 _3 _4 _5
90. _1 _2 _3 _4 _5
100. _1 _2 _3 _4 _5

403 • 432-3824

FACULTY OF HOME ECONOMICS

THE UNIVERSITY OF ALBERTA • EDMONTON, CANADA • T6G 2M8

Dear Parent:

We are seeking permission for your child, _____ to participate in a project which will study how teenagers view themselves (self-concept). To determine how adolescents feel about themselves in different situations, we will ask students to complete four questionnaires during regular school hours. On the average this will require one hour though some students will require longer. Your child will be free to withdraw from the project at any time. Questionnaire answers will be completely confidential. No one will know his/her name and his/her name will never appear in any research reports.

The results of the project will not have meaning for the individual participant as we are interested in how teenagers feel as a group. Therefore no individual results will be made available but a summary of group results will be provided upon request. While there is no direct benefit to your child at this time, it is hoped that this project will contribute to a better understanding of adolescents and the ways in which we can assist them.

If you give consent for your child to assist us in this project, please sign the attached form and place it in the stamped, self-addressed envelope.

If you have any questions regarding the study or should you decide to withdraw your child, please contact Joyce Magill 432-5141(days), 433-0064(evenings).

Thank you for your assistance.

Joyce Magill

I,_____, having read the letter of explanation, give consent for my child_____, to participate in the project being conducted by Joyce Magill in cooperation with Dr. N. Hurlbut, Department of Family Studies, University of Alberta.

Signature _____

Relationship to child _____

Telephone number _____

Date _____

I wish to receive a summary of group results. ___Yes ___No

___I do not give consent for my child to participate in the above-mentioned study.

APPENDIX B

Subject Variables
B-1:IQ Scores
B-2:Family Situation
B-3:Parental SES
B-4:Parental Education
B-5:Church Affiliation
B-6:Type and Degree of Disability
B-7:Age Categories

APPENDIX B-1

IQ Scores

	Mean	Median	Range
Disabled Girls	101.54	104	(85-116)
Nondisabled Girls	101.09	101	(79-122)
Disabled Boys	99.99	99	(83-115)
Nondisabled Boys	101.40	97	(86-124)

APPENDIX B-2

Family Situation

	2 Natural Parents	Single Parent	Common law	Foster
Disabled Girls	8	1	2	
Non-dis. Girls	11			
Disabled Boys	8	1	1	1
Non-dis. Boys	9	2		
Total	36	4	3	1

APPENDIX B-3

Parental Socioeconomic Status

	High	Middle	Low
Dis.Girls			
Mother	0	6	5
Father	2	1	6
Nondis.G.			
Mother	2	6	3
Father	6	2	3
Dis. Boys			
Mother	2	5	4
Father	3	4	4
Nondis.B.			
Mother	1	7	3
Father	2	1	5
All Girls			
Mother	2	12	8
Father	8	3	9
All Boys			
Mother	3	12	7
Father	5	5	9
All Dis.			
Mother	2	11	9
Father	5	5	10
All Nondis.			
Mother	3	13	6
Father	8	3	8

High=Blishen's group 1 & 2
Middle=Blishen's group 3 & 4
Low=Blishen's group 5 & 6

APPENDIX B-4

Parental Educational Background According to Child Report

	Number of Years of Schooling				
	0-9	10-12	13-16	17+	Total
Dis. G.					
Mother	3	6	1	1	11
Father	4	3	0	1	8
Non-dis.G.					
Mother	3	5	2	1	11
Father	2	5	2	2	11
Dis. B.					
Mother	1	7	3	0	11
Father	2	7	1	1	11
Non-dis.B.					
Mother	4	4	3	0	11
Father	2	4	3	0	9
Disabled					
Mother	4	13	4	1	
Father	6	10	1	2	
Non-dis.					
Mother	7	9	5	1	
Father	4	9	5	2	
Boys					
Mother	5	11	6	0	
Father	4	11	4	1	
Girls					
Mother	6	11	3	2	
Father	6	8	2	3	

APPENDIX B-5

Church Affiliation

	Catholic	Protestant	None
Disabled Girls	3	3	5
Non-disabled Girls	4	3	4
Disabled Boys	3	4	4
Non-disabled Boys	4	3	4
Disabled	6	7	9
Non-disabled	8	6	8
All Boys	7	7	8
All Girls	7	6	9

APPENDIX B-6

Type of Cerebral Palsy

	Boys	Girls	Total
Spastic Diplegia	4	5	9
Spastic Quad.	3	2	5
Left Hemiplegia	1	1	2
Right Hemiplegia	1	2	3
Athetoid Quad.	1	2	3

Quad.=Quadriplegic

Degree of Disability

	Mild	Moderate	Severe
Boys	5	4	2
Girls	5	4	2
Total	10	8	4

mild=independent ambulation
moderate=assistive device used for ambulation
severe=wheelchair user

APPENDIX B-7

Age(years) and Age Categories

	Mean	Range	Junior High	Senior High
Disabled Girls	15.8	13.1-17.9	3	8
Non-disab. Girls	15.8	13.3-18.3	3	8
Disabled Boys	15.7	13.8-18.2	5	6
Non-dis. Boys	15.6	13.6-17.9	5	6

APPENDIX C

FACES II Data
C-1: Adaptability Scores
C-2: Cohesion Groups
C-3: Total FACES II Groups
C-4: Univariate Analysis of Cohesion Groups

APPENDIX C-1

Adaptability Scores from FACES II

	Categories Rigid	Bal.	Chaotic	Mean	Range
Disabled Girls	2	5	4	44.2	29-58
Non-dis. Girls	0	8	3	46.5	39-55
Disabled Boys	0	10	1	46.5	38-54
Non-dis. Boys	3	8	0	42.3	33-52
Total	5	31	8		

Bal.=Balanced

APPENDIX C-2

Cohesion Groups From FACES II

	Disengaged	Balanced	Enmeshed
Disabled Girls	1	6	4
Non-dis. Girls	2	4	5
Disabled Boys	2	5	4
Non-dis. Boys	3	6	2
Total	8	21	15

APPENDIX C-3

Total FACES II Scores

	Balanced	Mid-Range	Extreme
Disabled Girls	3	5	3
Non-dis. Girls	4	4	3
Disabled Boys	6	4	1
Non-dis. Boys	5	4	2
Disabled	9	9	4
Non-dis.	9	8	5
Girls	7	9	6
Boys	11	8	3
Total	18	17	9

APPENDIX C-4

Univariate Analysis of Cohesion Group and Overall Self-Esteem(Pscore)

Cohesion Group	Pscore Mean	SD
Balanced (N=21)	329.14	23.74
Enmeshed (N=15)	349.39	33.13
Disengaged (N=8)	315.37	39.00

APPENDIX D

Correlations
D-1: CSI with TSCS
D-2: TSCS Subscales
D-3: CSI Subscales

APPENDIX D-1

Significant Pearsonian Correlations for the CSI and TSCS from Two Studies

TSCS	CSI Total	General	Social	Lie
Pscore				
K&C	.82	.74	.51	-.35
Magill	.78	.72	.37	-.34
Physical				
K&C	.68	.64	.59	.76
Magill	.73	.73	.43	-.34
Personal				
K&C	.78	.70	.43	-.43
Magill	.72	.74	.47	-.39
Family				
K&C	.55	.47	.41	—
Magill	.62	.51	—	—
Social				
K&C	.65	.64	.48	—
Magill	.66	.54	.45	—
Self-crit.				
K&C	-.37	-.34	—	.67
Magill	—	—	—	—

K&C=Kernaleguen & Conrad, 1980
Magill= current study

APPENDIX D-2

Pearsonian Correlation Coefficients for the TSCS Subscales From 3 Sources

	P	Phys.	Pers.	Fam.	Soc.	S.C.
Physical						
TSCS	.75					
K&C	—					
Magill	.84					
Personal						
TSCS	.90	.67				
K&C	.90	.71				
Magill	.87	.82				
Family						
TSCS	.88	.48	.75			
K&C	.73	.58	.52			
Magill	.81	.64	.65			
Social						
TSCS	.88	.65	.73	.70		
K&C	.82	.49	.66	.54		
Magill	.77	.51	.61	.46		
S.C.						
TSCS	-.10	.04	-.18	-.18	.00	
K&C	-.33	—	-.41	—	—	
Magill	-.08	.05	-.09	.06	-.17	
Conflict						
TSCS	.11	-.11	-.11	-.07	-.16	.11
Magill	-.28	-.25	-.14	-.14	-.36	.12

TSCS=test manual
K&C=Kernaleguen & Conrad, 1980
Magill=current study
S.C.=Self-criticism

APPENDIX D-3

Pearsonian Correlation Coefficients for the CSI Subscales From 3 Studies

	Total	General	Social	Acad.	Parent
General					
Battle	.84				
K&C	.93				
Magill	.87				
Social					
Battle	.57	.43			
K&C	.63	.53			
Magill	.56	.47			
Academic					
Battle	.52	.22	-.02		
Magill	.60	.23	.07		
Parents					
Battle	.64	.38	.07	.31	
Magill	.77	.66	.10	.43	
Lie					
K&C	-.34	-.33	—		
Magill	-.27	-.29	-.19	-.03	-.24

Battle=test manual (1981)
K&C=Kernaleguen & Conrad, 1980 (adult form)
Magill=current study

APPENDIX E

Intelligence
-Regression Analysis
-Oneway ANOVA
-Graphic representation

Regression Analysis:IQ and Pscore

ANOVA	Df.	SS	F	Prob.
Regression	1	64.06	.06	.806
Residual	42	44268.84		

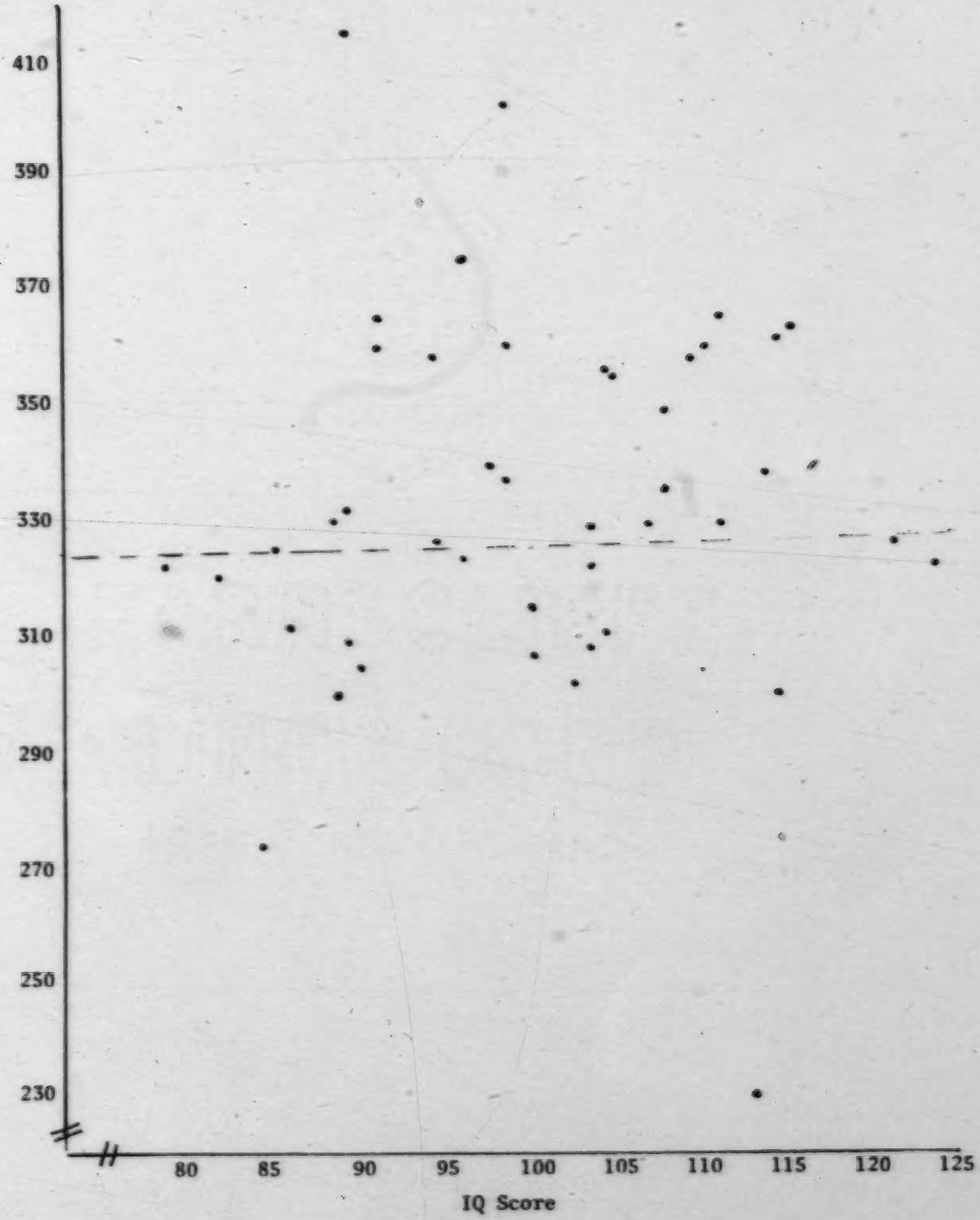
r square=.001
Constant=322.2067
Beta=.038

Oneway ANOVA for 4 IQ Groups
(Dependent Variable=Pscore)

IQ	No.of Cases	Mean Pscore	SD
79-90	10	324.30	36.30
91-100	11	350.54	27.72
101-110	13	329.08	20.20
111-124	10	329.89	41.45

F-ratio:1.479(p=.235)
Cochran's C:0.408(p=.243)

Scatter Diagram of Pscore and IQ



Regression Line: y=322.21 + .038x

APPENDIX F

Univariate Analysis of Parental SES and Child's Overall Self-Esteem(Pscore)

	Number	Mean	S.D.
High			
Mother	5	350.80	31.74
Father	13	339.54	29.43
Middle			
Mother	24	337.25	29.54
Father	8	353.75	29.58
Low			
Mother	15	321.87	34.20
Father	18	329.67	26.01

F-ratio: mothers 1.957(p=.15)
fathers 2.098(p=.14)
Cochran's C: mothers .3835(p=.90)
fathers .3620(p=1.0)

APPENDIX G

Univariate Analysis of Acknowledgement of Status as Cerebral-Palsied and Overall Self-Esteem(Pscore)

	Number	Mean	S.D.
Stated they had C.P.	15	323.73	40.46
Denied having C.P.	7	332.57	24.89

F-ratio: 0.279(p=0.603)

Cochran's C: 0.725(p=0.141)

APPENDIX H

Univariate Analysis of Denomination and Pscore(Overall Self-Esteem)

	Number	Mean	S.D.
Catholic	14	333.07	32.99
Protestant	13	327.61	21.00
None	17	338.47	38.75

F-ratio: 0.411(p=0.67)

Cochran's C: 0.495(p=0.19)

APPENDIX I

Univariate Analysis of Family Situation and Pscore (Overall Self-Esteem)

	Number	Mean	S.D.
Intact Family	37	336.97	28.99
Others	7	315.43	43.48

F-ratio: 2.758(p=0.104)

Cochran's C: 0.692(p=0.070)

Others=common-law families
single parent homes

APPENDIX J

Items From Physical Self-Esteem Subscale(TSCS)

		Compl. False 1	2	3	4	Compl. True 5
Physical Items						
I like my looks just the way they are.	DG	2	2	2	3	2
	NDG		2	3	5	1
	DB		2	2	1	6
	NDB		2	2	4	3
I should have more sex appeal	DG	2	1	6		2
	NDG	2	5	4		
	DB	2	3	4	2	
	NDB	1	2	8		
I have a healthy body.	DG		1	4	4	2
	NDG			1	8	2
	DB			5	4	2
	NDB			2	6	3

DG=disabled girls
NDG=non-disabled girls
DB=disabled boys
NDB=non-disabled boys

1=completely false
2=mostly false
3=partly true
partly false
4=mostly true
5=completely true

APPENDIX K

Univariate Analysis of Age Category and Pscore(Overall Self-Esteem)

	Number	Mean	S.D.
Junior High	16	327.44	23.18
Senior High	28	337.04	36.17

F-ratio: 0.908(p=0.346)
Cochran's C: 0.709(p=0.047)